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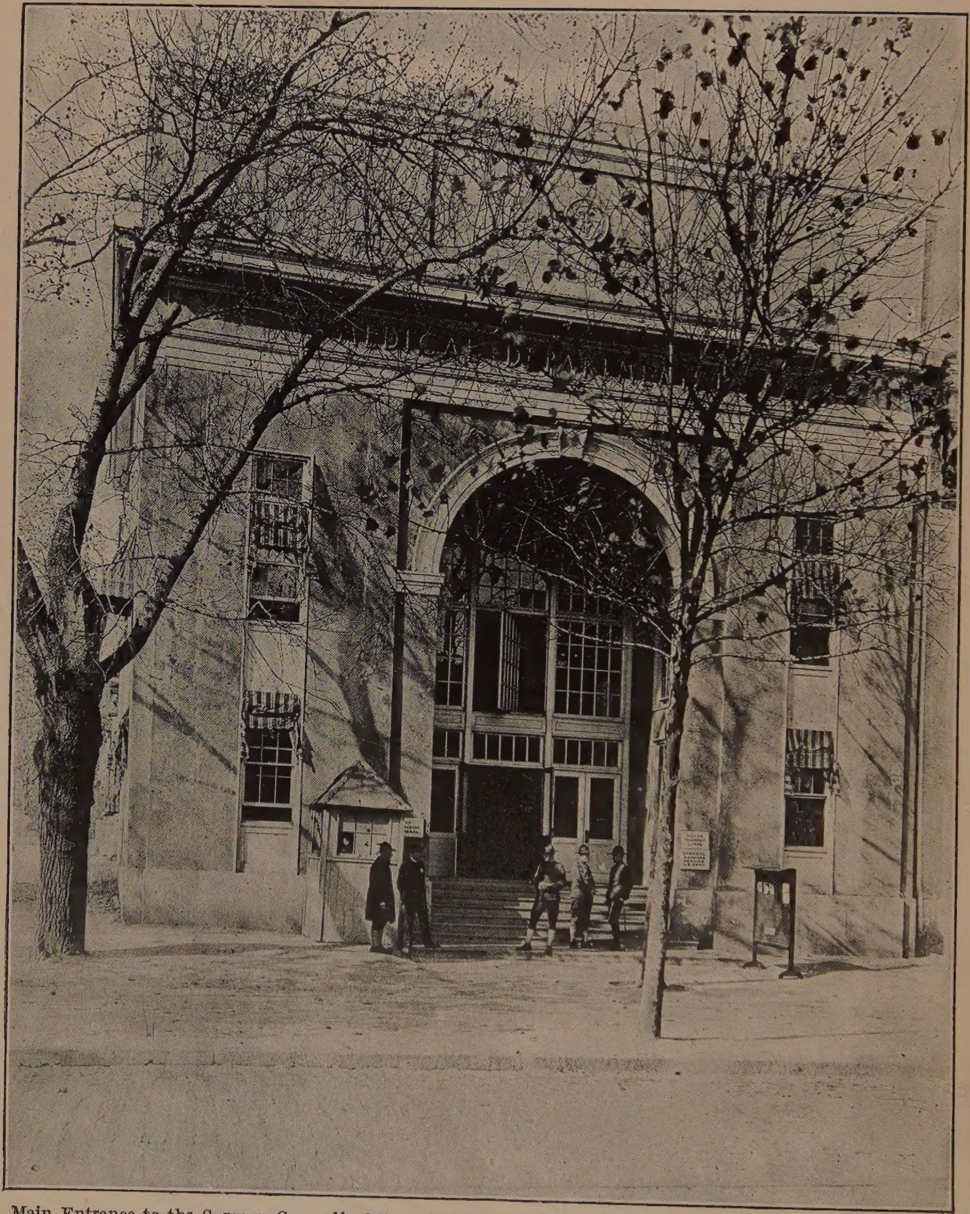

Main Entrance to the Surgeon General's Office. Temporary building, Unit F, occupied from May 3, 1918, to August 30, 1920.

United States,

The
MEDICAL DEPARTMENT
OF THE UNITED STATES ARMY
IN THE WORLD WAR

VOLUME I

THE
SURGEON GENERAL'S
OFFICE

PREPARED UNDER THE DIRECTION OF

MAJ. GEN. M. W. IRELAND, M. D.,
Surgeon General of the Army

By

COL. CHARLES LYNCH, M. C.
LIEUT. COL. FRANK W. WEED, M. C.
LOY McAFEE, A. M., M. D.

UNITED STATES OF AMERICA WAR OFFICE

WASHINGTON : : GOVERNMENT PRINTING OFFICE : : 1923

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LETTER OF TRANSMISSION.

I have the honor to submit herewith Volume I of the history of the Medical Department of the United States Army in the World War. As this is the first volume, and as the work is an exhaustive one, it seems appropriate here to state the purposes of the history in question, and to give certain other information to enable the reader to study it with fuller knowledge. Nor can I permit this opportunity to pass without expressing appreciation of the notable services rendered by our World War Medical Department.

The purpose of the history of the Medical Department in the World War is twofold. It is intended not only as the permanent written record of the accomplishments of the Medical Department in the war, thus rendered available for study with a view to the betterment of that department for the future, but also as a contribution to medical science. That it will be of great value from both standpoints may fairly be assumed, judging by what has happened with similar histories previously published. Of this, our own history of the Civil War is one of the most notable examples. Described in its pages is the masterly medical organization of Letterman, on which has been based that of all modern armies, and which, in certain subjects even yet, notwithstanding revolutionary changes in medical, surgical, and sanitary practice in the meantime, is accepted throughout the world as one of the highest authorities on mass scientific information, to be gathered only from war experience involving carefully kept records based on observations made on hundreds of thousands of men.

This history should be regarded, too, as a monument to those who, constituting the Medical Department of the Army, contributed to the success of our Nation at arms by preventing disease, by rapid cure of ill and injured, with restoration to duty, and by sustaining morale through prompt rescue of wounded in battle; and who, at all times, gave skillful and tender care to sick and wounded officers and soldiers. That such a monument might actually be erected is due to the liberality of the Congress of the United States.

No just estimate can be made of the work of the Medical Department during the war unless one knows its status when war began for us. My first duty, therefore, would appear to be briefly to summarize this. At that time, our medical officers were of three classes, numbering, Regular Army, 491; Medical Reserve Corps, 342 (in active service); and National Guard, 1,267. Those in the Regular Establishment were highly trained, so far as peace-time training could go. The Medical Corps, National Guard, had some highly trained and experienced officers, but about 50 per cent had recently joined. The small Medical Officers' Reserve Corps comprised a few officers trained from the military standpoint, but, in the majority of instances, without any military experience. This reserve, being actually provided for by law, was a matter of great moment, however, as it permitted immediate expansion. In addition, our country afforded a very large and generally able medical profession practically without military training but with a few influential members who, from recent experience abroad, could speak with some authority regarding war hospital organization, especially as this had to do with the proper utilization of professional personnel. Professional skill was of a very high order among the leaders of the medical profession and good among a considerably larger number. The possibilities of making professional skill of military value were far greater than in any previous war because of greater knowledge of medicine, surgery, and sanitation. Before the war valuable machinery for obtaining and classifying civilian doctors was made ready to operate. This consisted of the Committee on Medicine of the Council of National Defense, and the American Medical Association.

For a considerable number of years before the war, dental officers had been commissioned in both the Regular Army and the National Guard. Though they numbered but 335, they had adequate experience for the administrative duties likely to be required of the Dental Corps, and had behind them a capable dental profession in the country at large. An active dental section also existed in the Committee on Medicine, Council of National Defense.

Only 135 veterinary officers were available when war came. Veterinary service under the Medical Department was a new thing in our Army, as prior to the passage of the national defense act in 1916 the Quartermaster's Department had controlled matters in this respect.

There was a small force of enlisted men (6,619) in the Regular Establishment when war began. Exact figures are not available for the National Guard Medical Department on this date, April 6, 1917. When finally mustered into the Federal service, August 5, 1917, the National Guard enlisted strength, Medical Department, amounted to 16,623. Most of these men were newly joined, it being a well-known fact that the Medical Department, National Guard, suffered a material depletion after the unpopular border service of 1916. The enlisted force, especially in the Regular Army, was a great asset on account of the highly trained noncommissioned officers. The number of these, however, was comparatively small. The enlisted reserve was very small and not important.

A sufficient and trained nucleus of women nurses existed in the Regular Army (403), with an excellent reserve organized by the Red Cross (8,014), among which were found many capable executives.

Of other corps there was none.

War Department plans and national sentiment indicated that liberal appropriations would be forthcoming. Actually on hand were field medical supplies for an army of 300,000 men, though in this respect there was a great shortage of motor transport. Cooperation had been established with medical supply houses, largely through the Mexican border mobilization, supplemented by the efforts of the Committee on Medicine, Council of National Defense.

Four general hospitals were in operation, two only for general cases. Of these two one was well situated for World War use; the other was on the west coast. In addition, there were two relatively important department base hospitals which had been established during the Mexican border mobilization.

Both were in Texas and not so well located for present use. Two hospital trains were ready but no hospital ships. During peace time the great majority of Army patients had been cared for in small post hospitals. These post hospitals were not capable of much expansion for war, but a number of Army posts were suitable for use as hospitals, though only after considerable time-consuming additions and alterations. When war began for us a start had already been made by the Committee on Medicine, Council of National Defense, to list civil hospitals of the country suitable for Army use. This plan actually proved of small value, as civil hospitals are not capable of Army use save very exceptionally.

The organization of our Army, as this affected the Medical Department, was much better than at the beginning of any of our previous wars, but it was untried in dealing with vast armies; it was therefore subject to more changes than if the contrary had been the case. Medical Department field units were few but efficient. They were found in both Regular Army and National Guard, and comprised the following: Regular Army, 7 field hospitals, 9 ambulance companies; National Guard, 38 field hospitals, 26 ambulance companies. No divisions existed of which they formed an integral part. Red Cross base hospitals were important assets. They numbered 33 when we entered the war.

Responsibility for the care of sick and wounded and for the prevention of disease in troops has always devolved, in the last analysis, on the Medical Department. At the beginning of the war its power in the premises was greater than at the beginning of any of our previous wars. Then, too, scientific knowledge of sanitation had advanced to the stage where it had become possible to control all communicable diseases except those of the respiratory group. Unfortunately, diseases of this group were scattered among potential troops throughout the country who formed part of a large population nonimmune to the diseases which commonly precede the pneumonias. On the other hand, an effective method for the prevention of typhoid and paratyphoid fevers by vaccination was in practical operation in the Army, and there was no considerable amount of intestinal disease in the United States. It is also worthy of note that popular interest in sanitation existed to an extent which had not prevailed in any of our previous wars. The spirit of the crusader was capable of being encouraged, and it was likely to prove far more effective in personal hygiene than was the spirit manifested in previous wars in which the soldier was considered a hardy man whom nothing could injure. One unfavorable factor remains to be mentioned. Only a small Army was in being, with the vast majority of troops to be raised, and with practically all shelter, including incidental sanitary conveniences, still to be constructed when war came. In this connection it is to be understood that the Army posts which existed were too small for war mobilization, though capable of use for small units.

This review of our assets when we entered the war would be incomplete if mention were not made of certain volunteer agencies in being when war came. The Committee on Medicine, Council of National Defense, had been organized under the authority granted by the national defense act of Congress, approved June 3, 1916. Its work of preparedness in lining up the medical and dental professions and in respect to medical supplies and facilities proved of great value when war came. Some years before the war the

American National Red Cross had been officially recognized as the authorized volunteer agency to represent the American people in cooperation with the Medical Department of the Army. In none of our previous wars had a strong organization of this character been in existence before the war. The advantage of this to the Medical Department was very great.

The beginning of the World War for the United States found the medical profession of the country a unit in the desire to play a worthy part. By the time of the armistice, 30,591 physicians—a larger number than was ever assembled in any other army—were in service. The administrative machine, mainly operated, and well operated, by trained officers of the Regular Army and the National Guard, did, it is true, creak and strain at times with the enormous load it had to carry in untrained personnel, but there was never any breakdown, and at home and abroad the Army had at its disposal the best professional skill that the country afforded in all branches of medicine, surgery, and sanitation.

Back of the doctors who actually saw service in the Medical Department during the World War stood other members of the medical profession, both men and women, who, by reason of age or physical disability, or for other valid reason, were unable to go on active duty. Their readiness to help in any manner commensurate with the circumstances was evidenced by enrollment in the Volunteer Medical Service Corps. The medical profession of the United States has every reason to take great pride in the part it played in the World War, and in my opinion the honor of belonging to it has been greatly enhanced thereby.

In many of the activities of the Medical Department the newly created Sanitary Corps assisted notably. Among the 2,929 officers who constituted this corps at its maximum were found scientists in branches related to medicine, surgery, and sanitation, as well as selected former noncommissioned officers who had been commissioned especially that their services might be utilized for important administrative positions.

One of the first requests of our Allies when we entered the war was assistance for their medical service at the front. For this purpose the American Ambulance Corps was organized. This served with great credit with the French and Italian Armies, as well as with our own Army. The highest administrative positions and others of less importance in the Ambulance Corps were filled by medical officers.

The members of the dental profession also played their part not only in the lines of their particular specialty, but also as assistant medical officers at the front in time of battle. At the time of the armistice 4,620 dental officers were in service. The enlisted men of this corps also came from the Medical Department.

In the Veterinary Corps, before the close of the war, a force amounting to 2,234 officers had been commissioned. Their services unquestionably resulted in the saving of many animals and thus proved an important factor in promoting military efficiency.

Women nurses are now regarded as essential in the medical departments of armies. A total of 21,480 nurses were in service with the Army Nurse Corps during the war. They were found at the front, on lines of evacuation, and in hospitals at home, wherever serious illness or injury necessitated skilled nursing, which they supplied in ample measure.

The enlisted strength of the Medical Department amounted to 281,341 on November 15, 1918, when it was at its maximum. This number, it will be noted, is much greater than the strength of our whole Army immediately before the World War. In modern warfare great responsibilities rest on the enlisted man, as well as on the officer, and I believe the Medical Department enlisted force fully measured up to their responsibilities.

In the World War, modern medical methods were found to require certain classes of civilian hospital personnel which were quite new to armies. In our service, laboratory technicians, dietitians, and reconstruction aides for teaching disabled soldiers and for physiotherapy were found necessary. They filled important places not otherwise provided for. In addition to this technical civilian personnel, miscellaneous civilian personnel, so-called, was employed at hospitals and supply depots. This class, made up of individuals who, for one reason or another, were not fit to serve as soldiers, left free for active duty soldiers who otherwise must have been employed to fill these important positions; their contribution, therefore, was truly a valuable, patriotic one. The maximum number of civilian employees was 10,695 on November 15, 1918.

The members of the permanent clerical force of the Medical Department, on duty mainly in Washington but in small numbers at other headquarters, have been valuable public servants for many years. In fact, to how great an extent they have been responsible for carrying on the routine business of the Medical Department has never been generally appreciated. During the war, with vastly increased responsibilities, they fully maintained their hard-earned reputation for efficiency. At the outbreak of the war for us, a great many people flocked to Washington, and to other Army centers to a less extent, to help in any way they could. Naturally, being debarred from many war activities, most of these were women. From them came largely the war temporary clerical force in Washington and elsewhere in this country. It seems to me that the Medical Department was peculiarly fortunate in its war clerical staff. Very probably other bureau chiefs feel a like sense of gratitude toward their clerks, but at all events, it is certain that those of the Medical Department gave most loyal service to the Government.

I feel that I would fail in my duty if I did not assume the pleasant task of acknowledging the indebtedness of our Army and of our Nation to the tens of thousands of patriotic men and women who, together, constituted our World War Medical Department.

It has been stated that a distinct line is drawn between all previous wars and the World War in that the latter was not a war of armies but of nations. This proved to be the case with us, for never has voluntary aid poured out in such a flood. The value of the services of the Committee on Medicine of the Council of National Defense and of the Red Cross in connection with preparation for war have already been mentioned. This was but the earnest of the still more valuable services for sick and wounded that both organizations performed throughout the war in cooperation with the Medical Department of the Army. Many other large societies served sick and wounded as part of the war duties which they took upon themselves. The ill and injured owe them much for whole-hearted assistance. Many smaller societies, as well as hosts of individual volunteers, contributed services of value.

Comments on contributions to the success of the Medical Department in the war have been confined so far to those of our own Nation but this does not end the story. At home, and to a greater extent in France, in England, in Italy, in fact, wherever the American forces served, the resources of our Allies were freely placed at our disposal. In the turmoil of war, laboring under the greatest strain to do for their own, their medical departments were always found ready to assist us to the very limit of their ability. I can not say more.

With the very large medical personnel engaged in a war in which they braved the risks of contagion as well as those from the missiles of the enemy, and in which thousands shared the dangers of their brothers of the line, as was to be expected, the supreme sacrifice was required of all too many.

The losses of the Medical Department were as follows: Officers, 540; nurses, 250; enlisted men, 2,257. Names of medical officers who died in service will be found in Appendix I.

Turning now to the actual preparation of the history, many of the contributions to its pages have been made by officers no longer in active service and therefore at their own expense and at the sacrifice of much of their valuable time. The situation in this respect has not differed materially with the permanent officer contributors, for almost universally their historical work has been done in addition to the performance of the regular duties expected of them. In acknowledging the cordial aid of Medical Department officers the valuable assistance of officers of other branches of the service must not be overlooked; nor should the spirit of helpfulness displayed by the Government Printing Office on all occasions remain unacknowledged.

MERRITTE W. IRELAND,
Surgeon General, United States Army.

The SECRETARY OF WAR.

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[a] The highest rank held during the World War has been used in the case of each officer.

PREFACE.

It is proposed in the history of the Medical Department of the United States Army in the World War to discuss the subject from both administrative and scientific standpoints. In addition, elaborate statistics of professional interest will be included. Illustrations, maps, and charts, so far as may be necessary to a clear understanding of the text, will be found in its pages. Fifteen volumes are contemplated for the history and some of these volumes will be published in parts. The subjects of the various volumes will be essentially as follows: Volume I, The Surgeon General's Office; Volume II, Administration, American Expeditionary Forces (Central Administration; Hospitalization); Volume III, Finance and Supply (United States; American Expeditionary Forces); Volume IV, Camps, Posts, and Ports; Volume V, Hospitals (United States); Volume VI, Sanitation (United States; American Expeditionary Forces); Volume VII, Instruction and Training; Volume VIII, Field Operations, American Expeditionary Forces; Volume IX, Communicable and Other Diseases; Volume X, Neuropsychiatry; Volume XI, Surgery (General Surgery; Empyema; Maxillofacial Surgery; Ophthalmology; Otolaryngology; Neurological Surgery; Orthopedic Surgery); Volume XII, Roentgenology; Volume XIII, Physical Reconstruction; Nursing Service; Volume XIV, Gas Poisoning; Volume XV, Statistics (Army Anthropology; Medical and Casualty Statistics).

In the interests of completeness, mention is made of certain other historical volumes, covering restricted activities of the Medical Department in the World War. These are: Air Service Medical, prepared by the Division of Military Aeronautics, War Department, and printed at the Government Printing Office, Washington, 1919; Defects Found in Drafted Men, prepared under the direction of the Surgeon General, United States Army, and printed at the Government Printing Office, Washington, 1920; and Psychological Examining in the United States Army, Memoirs of the National Academy of Sciences, Volume XV, printed at the Government Printing Office, Washington, 1921.

Work on the history was begun in the Surgeon General's Office in 1917, in compliance with War Department orders, issued in August of that year, which provided for the organization of an historical board. While all administrative details respecting its progress will be found in the account of the Historical Division, which appears in this volume, an important policy adopted at the start and pursued throughout should be mentioned here. It is essential, of course, in an official history, that every effort be made to insure the absolute correctness of all statements which are made. In order to effect this, in so far as possible, in all cases the subjects to be covered in the history were assigned to authors who had been intimately connected with the activities concerned during the war, and who, therefore, had first-hand knowledge of the facts.

The general plan for War Department historical publications was announced on April 5, 1920, in a letter from The Adjutant General. addressed to the chiefs of all staff bureaus and to the Chief, Historical Branch, War Plans Division, General Staff, now the Historical Section of the Army War College. The subject of the letter in question was unification of historical publications. Paragraphs, in so far as they are of interest in the present connection, are quoted in full:

> In order that historical publications prepared by the several services, departments, and corps may be unified and fit into some general scheme, and to prevent duplication and to assure that the important activities of every service during the World War are made of record, the following plan of historical publication is announced:
>
> ### GENERAL PLAN, ALL SERVICES, DEPARTMENTS, AND CORPS OF THE WAR DEPARTMENT, FOR THE PREPARATION OF HISTORICAL PUBLICATIONS.
>
> 1. *Basic principles of plan.*—All historical publications will be supervised by the Historical Branch, War Plans Division, General Staff.
>
> Historical publications relating to the technical activities of a service from the point of view of the service itself will be prepared by the service historical officer. The Historical Branch in such cases will be concerned only with the selection of supporting documents and the form in which the necessary references to such documents appear.[a]
>
> 2. *Service historical officers.*—Upon receipt of this general plan each chief of service, department, or corps contemplating the publication of historical matter will designate a qualified officer as historical officer, also the necessary clerical assistance. This officer will inform himself of the policy of his service as to historical publications. The names of these service historical officers will be communicated as soon as practicable by the chiefs of services to the Historical Branch, War Plans Division, General Staff, Building "B," Washington Barracks.[b]
>
> 3. *Conferences of service historical officers.*—After the designation of service historical officers, conferences will be held at such time as may hereafter be designated by the Historical Branch, War Plans Division, General Staff. At these conferences the policies and requirements of each service in the matter of historical publications will be presented and a special plan drawn up giving a detailed plan of publication for each service.
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> * * * * * * *
>
> 7. *Form of publication.*—To insure accuracy, all publications will be based upon existing primary documents when practicable. That this care in the preparation of work has been taken should be evident on the face of publication itself by attaching to each paper prepared a list of documents constituting sources consulted and giving the location and brief description of these documents; and to facilitate further study of the subject, references should appear in the body of the work to the particular documents of the source list relied upon as a basis for every important statement of fact or conclusion.
>
> By order of the Secretary of War:
>
> (Signed) H. G. LEARNARD,
> *Adjutant General.*

This history is concerned only with the technical activities of the Medical Department from the point of view of that service itself and is therefore prepared under the direction of the service historical officer. Numerous conferences have been held, however, with the Chief of the Historical Branch, Army War College, who passes upon all manuscripts before they are sent to the Secretary of War for final approval for publication.

No further explanation is thought necessary regarding the military rules under which the history is published save in one respect. The General Staff has determined, according to general military practice, that "effort should be made to omit names from the text where this can be done without injury to the sense or to the historical value." The history of the Medical Department forms no exception to this rule.

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[a] The history of the Medical Department in the World War relates to its technical activities from the point of view of that service itself, and therefore falls in this class.

[b] The editor in chief of the Medical History was at once appointed by the Surgeon General as the historical officer of the Medical Service.

In 1920 an appropriation to publish the history was obtained from Congress. The item covering this expenditure applied to the Surgeon General's Office and appeared in the sundry civil bill providing for the year ending June 30, 1921. It is as follows:

> Medical and Surgical History of the War with Germany: toward the preparation for publication, under direction of the Secretary of War, of the Medical and Surgical History of the War with Germany, including printing and binding at the Government Printing Office, and the necessary engravings and illustrations, $50,000: *Provided*, That the cost of such history shall not exceed $150,000.

An additional appropriation of $50,000 was made the next year.

The scope of the present volume of the history has been changed to a considerable extent from that originally contemplated, and included in the tentative plan for the history as a whole outlined by Lieutenant Colonel Garrison, M. C., in *The Military Surgeon* for May, 1919. It was intended that this volume be divided into two parts, the first to give the history of each of the administrative divisions of the Surgeon General's Office, the second to give a narrative account of the so-called correlated activities, including all agencies which assisted in carrying out the general purposes of the Medical Department as prescribed by law and regulations or established by custom. Further study indicated that this plan was not sufficiently comprehensive to give a clear idea of central Medical Department administration, which was the real purpose of the volume. Certain additions, therefore, have been made, as may be seen from the text.

During the earlier stages of the preparation of the volume Lieutenant Colonel Garrison, M. C., was in direct charge of the compilation of the administrative histories of the divisions of the Surgeon General's Office, as well as of editing the volume as a whole. Lieutenant Colonel Casey A. Wood, M. C., was charged with the preparation of the correlated activities. These officers did much valuable work on their respective assignments, but the exigencies of the military service resulted in their separation from the activities connected with the history, except as members of the Editorial Board. This separation occurred with Lieutenant Colonel Garrison in December, 1920, and with Lieutenant Colonel Wood in October, 1920. Since these dates all editorial work on the volume has been handled in the Historical Division.

The idea of preparing official medical and surgical histories of wars apparently originated with the Medical and Surgical History of the British Army which served in Turkey and the Crimea during the War against Russia in the years 1854–55–56, published by the British Army medical department in 1858. This history owed its inception to the fact that Andrew Smith, then director general of the British Army medical establishment, was unable to find in records of previous wars any data which might be of value in making plans for the care of the sick and wounded. He determined, therefore, that those who came after him should encounter no similar perplexities. Accordingly, he proposed to the Minister of State for War and to the commander in chief of the army that there be prepared a *précis*, or descriptive index, of all letters relating to the war, as well as an analysis of all professional documents sent from the front by medical officers. This *précis* was published in two volumes and was followed by the history proper in two volumes. Histories of French and Russian participation in the Crimean War, by J. C. Chenu, published by the French Government, and C. von Hübbenet, published in Berlin, appeared in 1865 and 1871, respectively. Thus the medical record of what, from the viewpoint of lack of medical preparedness, faulty sanitation, and disease incidence, was a most disastrous war, was amply preserved for future generations of medical officers, and undoubtedly had an important effect in hastening improvements in army reorganization after that event.

In acknowledging indebtedness to the British medical and surgical history of the Crimean War, Woodward, one of the principal editors of the Medical and Surgical History of the War of the Rebellion, said: "It had proved of great value in giving direction to our efforts. What was the direction these efforts took, what were the results obtained, why our soldiers die, and how this can be best and most economically prevented in future wars, are questions upon which the experience of the present struggle as recorded in the official reports and documents can throw 'a flood of light.'" Such a publication, therefore, in Woodward's opinion, "becomes one of the most important duties of the Medical Department of the Army; a duty the evasion or neglect of which would be a grave crime against the Army of the United States and against every American citizen who, in future wars, volunteers in the defense of his country." As it proved, the Civil War medical and surgical history fulfilled a much larger purpose than this, for the carefully gathered material which found permanent record in its pages was actually made use of as largely by the civilian as by the military practitioner of medicine, and, consequently, the civilian benefited no less than the soldier patient from what, as Woodward expressed it, was truly "a flood of light."

Very soon after his appointment steps were taken by the Surgeon General, William A. Hammond, to promote the preparation of a medical and surgical history of the Civil War. On May 21, 1862, he made provision, by modification in the returns from medical officers, for obtaining more exact and detailed reports of sick and wounded, announcing on the same day (Circular No. 2, Surgeon General's Office) that an Army Medical Museum would be established, with instructions to medical officers "diligently to collect and to forward to the Office of the Surgeon General all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable, together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine and surgery." On June 9, 1862, he published a circular to all medical officers announcing the intention of his department to prepare a medical and surgical history, Surgs. John H. Brinton and Joseph Janvier Woodward having been ordered to duty in his office for that purpose on June 4. On August 1, 1862, Brinton was made virtual curator of the Military Medical Museum. The order directing him to collect and arrange specimens in the museum terminates with the following significant sentence: "Should any medical officer of the Army decline or neglect to furnish such preparations for the museum, you will report the name of such officer to this office." By July 1, 1863, Brinton had already prepared and published an interim consolidated statement of gunshot wounds, and on September 8, Woodward, then in charge of medical records, published a Report on Sickness and Mortality of the Army during the First Year of the War. Progress thereafter was rapid. The forms for returns of sick and wounded were revised and improved during 1863–64. The orders for return of statistical and clinical data, while not so peremptory as were those for collecting specimens for the museum, were of similar intention, and it is plain that the preparation of material for the history was regarded as a duty and was so announced by the Surgeon General. This should not be held to mean, however, that medical officers generally tried to escape doing their part in the preparation of the history. Quite the contrary was the fact; and the value of the medical history of the Civil War, as is true of every similar history, is due in equal measure to the work of the many medical officers in the field, and to that of the few who gathered their records together and finally published them as a history.

During 1865–66, medical directors of departments and of armies in the field were directed by Surg. Gen. Charles H. Crane to forward to his office all copies of divisional or field hospital reports, registers and records of sick and wounded, and individual case reports of gunshot wounds which might be available for historical purposes. Thus all the necessary material was ultimately assembled in the Surgeon General's Office. On September 29, 1864, Brinton was relieved by Asst. Surg. George A. Otis. On November 1, 1865, Circular No. 6, Surgeon General's Office, was issued, being "Reports on the Extent and Nature of the Materials Available for the Preparation of a Medical and Surgical History of the Rebellion," by Woodward. This was a quarto volume of 166 pages, issued and distributed in an edition of 7,500 copies. With this start, and through the influence of Secretary of War Stanton, who took the deepest interest in the work, a congressional appropriation was finally granted on June 6, 1868, for the preparation for publication of 5,000 copies of the first part of the history, and on March 3, a joint resolution of Congress authorized that these 5,000 copies be printed at the Government Printing Office. Subsequent appropriations were made for the remaining volumes. The history appeared during 1870–1888, in six massive quarto volumes, three medical and three surgical, of "family Bible" size and shape. Woodward died in 1884, and the third medical volume was completed by Col. Charles Smart, M. C., while the third surgical volume was completed by Otis and Col. David L. Huntington, M. C. The two series are preceded by masterly introductions by Woodward and Otis, and are arranged as follows: Medical Series: Volume I (1870) gives statistics of sickness and mortality, followed by historical reports of medical officers on separate battles and military operations, arranged in chronological order; Volume II (1876) treats of the diarrheas and dysenteries ("Alvine fluxes"); Volume III (1888) gives an analysis of the medical statistics of the war, followed by chapters on the continued and eruptive fevers, respiratory, cardiac and other conditions affecting the soldiers during the war, ending with an important chapter on the general hospitals, including plans. Surgical Series: Volume I (1870) begins with a chronological summary of Union and Confederate losses in killed, wounded, and missing, by battles and engagements, followed by sections on injuries of the head and neck; Volume II (1876) deals with injuries of the abdomen, pelvis, back, and upper extremities; Volume III (1883) deals with injuries of the lower extremities, and injuries and surgical diseases of all other parts of the body, concluding with important chapters on anesthetics, duties of the medical staff, surgical matériel, and modes of transportation of the wounded. Otis concludes his introduction to Volume I with a list of United States medical officers (Regular and Volunteer) killed in battle, died from wounds, and wounded in battle.

This work, with its wonderful array of bibliographic footnotes, its pioneer accounts of the effects of gunshot injuries of nerves (Weir Mitchell, Morehouse, Keen), irritable heart of soldiers (Da Costa), the ipecac treatment of dysentery (Woodhull), ambulance service (Letterman), trench nephritis, and venereal prevention, was at once received with enthusiasm by the medical profession of the entire world. In some respects it was the outstanding production of American medicine during the period, and was hailed as such by no less an authority than Virchow.[a] The narratives by medical officers of battles and campaigns were used by subsequent military historians, and the chapter on hospital construction afforded a valuable repository of information during the World War.

A unique feature of the Medical and Surgical History of the War of the Rebellion is that not only was the experience of the Army to which it pertained made of permanent record there, but, in the interest of completeness, a good deal of valuable scientific data from other sources was incorporated. Confederate methods for making medical records were very similar to those on the Federal side, and many of these records were finally secured. After the war former medical officers of the Confederate service gave considerable assistance by contributing histories of cases, pathological specimens, statistical data, and facts concerning the termination of major injuries and operations. Data were obtained from the pension examiners, from the surgeon generals, and adjutant generals of States; in fact, no possible source of information was overlooked.

Neither the British South African War nor our own Spanish-American War was chronicled in an official history, though a great deal of interest and value regarding them has appeared in print. Boards of inquiry in each case were appointed after the war to investigate the conduct of the medical departments of the respective countries, each having failed to measure up to the standard demanded by the public. The historical student may find a great mass of information in the proceedings of the boards in question. Fortunate, though, is the medical department which does not have to write its history in this way; and it is noteworthy that, notwithstanding the magnitude of the task and our lack of preparation for it, there has been no suggestion of such a board for the World War.

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[a] Virchow, in an address on infectious diseases in the army (1879): That the French learned little or nothing in the Crimea and the North Americans so much in their Civil War, that from that date onward begins a new era of military medicine—this depends not on the magnitude of the necessity which the Americans had to undergo, which in truth was not greater than the French underwent in the Crimea. It was far more the critical, genuinely scientific spirit, the open mind, the sound and practical intelligence, which in America penetrated step by step every department of army administration, and which under the wonderful cooperation of a whole nation reached the highest development that, relative to humane achievements, had hitherto been attained in a great war. Whoever takes up and looks into the comprehensive reports of the military medical staff will be again and again astonished at the richness of the experiences chronicled therein. The utmost accuracy of detail, painstaking statistics embracing the minutest particulars, an erudite exposition comprehending every aspect of the practice of medicine, are here united in order to preserve and transmit to contemporaries and to posterity, in the most thorough way possible, the wisdom purchased at so tremendous a price.

Before concluding this preface, it is necessary to say a few words on how the march of events has irresistibly affected this history as compared with former histories of the same kind.

It should be noted that this is the first comprehensive official war history of medicine which has been published for many years. The only exceptions are the Japanese histories of the part their medical department played in the Chino-Japanese and in the Russo-Japanese Wars. That it did play a notable part is well known, but unfortunately the official histories in question have never been translated in their entirety so as to make them available to others than Japanese readers. Doubtless they have profited, but so far as almost all the readers of this history are concerned the historical standards of comparison date back so many years that in the meantime we have actually passed from one epoch to another, both from the military and from the medical standpoint.

War has been changed fundamentally by new methods of warfare, and these military changes have affected the story of the Medical Department. At the time of our Civil War and much later the organization of the Medical Department was a fairly simple one. To-day it must be far more complicated in order to fit into the more intricate military machine.

Increased complexity in army organization is not solely responsible for this change. In the earlier days, as the possibilities of the effect on military efficiency of an efficient medical department were not understood, so no very serious attempt was made in any army to develop it from this standpoint; to-day quite the contrary is the case. That is to say, in Civil War days and later, the subject of medical department organization and administration could be touched on lightly for there was comparatively little to tell. Nowadays volumes are required to cover all the complex details, rendered the more complex on account of the distance from our own shores at which the war was fought.

The space allotted in this history to organization and administration represents only the relative importance of these subjects, as shown in the World War records. It will have been well expended if it serves to show in detail to the medical administrator of the future what was done in these directions. With the increased and increasing complexity of modern warfare, it is certain that in the future medical department organization and administration will loom very large and that the officers charged with carrying on the medical service of a great army in campaign will need all possible aid in the way of historical records.

If, as has been the case, great changes have taken place on the military side since the earlier medical war histories were published, what has happened in the meantime on the medical side? Here an actual revolution has been effected. The wars represented by the earlier histories were carried on before modern medicine was born. For example, while the Medical and Surgical History of the War of the Rebellion is an inexhaustible mine of information regarding diseases and injuries, where often can be found facts available in the mass nowhere else, so far as its present value is concerned, it almost stops there, for medicine and surgery as practiced in that day are now discredited arts on account of the many scientific discoveries made in the interval. Then there was no bacteriology, there were no laboratories, there was no sanitation according to modern standards, nor was there, in fact, much of anything relating to the present practice of medicine, surgery, and sanitation. Nor did doctors specialize to any extent.

The work of the Civil War medical historians was a masterly achievement which resulted in the publication of a classic. On the other hand, the scope of their scientific activities was necessarily limited by the medical knowledge of their time. Medical knowledge has increased by leaps and bounds since then, and so a history of to-day must treat of many things not even within the realm of scientific dreams in Civil War days.

It would be unbecoming to conclude this preface without a general acknowledgment of the assistance given by literally hundreds of World War medical department officers. Each has been thanked individually so far as might be, but in the thousands of communications on the subject it is possible that some may have gone astray. It is desired nevertheless that every contributor realize from what is said here that his assistance is appreciated, that through it and through that of other contributors who played their important part in the war, and through this only, has it been possible to prepare this history. It is true that many contributors will not see in its pages exactly what thay have prepared, very often, doubtless, in a busy professional life, at the sacrifice of a great deal of valuable time. This does not mean that their material has not been used in the history or that their contributions have been lost and forgotten. The limits set upon the size of the printed history were as liberal as it was possible to make them. Material was received in such amount that ten times as many volumes would have been required to publish it all. It was not possible, therefore, to print *in extenso* a great deal that well deserved the light. All this material was used first to get together the history. Now, it has been carefully preserved and will be disposed of in such a manner as to be available in the future to historical and other students.

Thanks are especially due to Dr. Mary Pearson McKnight, Contract Surgeon, U. S. Army, who is in general charge of the documentation of the history. This work would have been possible only to one combining, as she does, professional knowledge with exceptional qualifications for historical research and indefatigable patience and industry. The history has profited greatly also from the exact knowledge of Medical Department matters possessed by Lieut. Frank Steiner, M. A. C., a member of the Historical Division. An exceptionally able clerical staff has played its important part in compiling the history. The members thereof are as follows: Florence E. Brill, Bertha McDowell Carroll, Ruth F. Deegan, Lillian G. Knowles, Myer S. Lipshitch, Benjamin M. Oppenheim, D. Wilbur Parks, Mildred A. Robertson, Mabel A. Thrasher, and Lillie M. Wheeler.

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GENERAL INTRODUCTION.

I. EVOLUTION OF THE MEDICAL DEPARTMENT.[a]

In order to furnish a background for the history of the Medical Department of the United States Army as it operated during the World War, it is deemed pertinent to trace briefly the various stages of the evolution of medical departments of armies in general, dwelling at length on the phases of this development which have exerted a more or less definite influence upon the organization of our own medical department and its expansion to the stage reached by April 6, 1917. It is true that old methods, because largely, if not wholly, obsolete, might well be disregarded; on the other hand, certain ancient underlying principles continue to obtain, and it is for this reason that the earlier steps in army medical department progress are traced. By sketching the distant background lightly and the foreground more heavily, it is believed that the truest picture will result.

ANCIENT HISTORY.

Military medicine is practically as old as armies. While in Egypt, in the Assyro-Babylonian civilization, and among the Hebrews, medicine and surgery were developed earliest, the records which have come down to us from these nations are of no importance from the present standpoint, except as they relate to sanitation as practiced by the Hebrews, among whom the priests were hygienic police and the physicians were a class apart.

So far as textual records go, the Hebrews were the founders of public hygiene; they had a very definite idea of the nature of contagion, as the book of Leviticus shows, and of the need for isolating individuals suffering from contagious diseases. Here, then, we have a highly effective scheme of sanitation for hot climates, which was never observed or recorded by the Greeks and the Romans. In Deuteronomy a careful dietetic regimen is outlined, and the following remarkable rules for the sanitary policing of a military camp are given:[1]

> 9. When the host goeth forth against thine enemies, then keep thee from every wicked thing.
>
> 10. If there be among you any man that is not clean by reason of uncleanliness that chanceth him by night, then shall he go abroad out of the camp, he shall not come within the camp.
>
> 11. But it shall be, when evening cometh on, he shall wash himself with water; and when the sun is down, he shall come unto the camp again.
>
> 12. Thou shalt have a place also without the camp, whither thou shalt go forth abroad;
>
> 13. And thou shalt have a paddle upon thy weapon; and it shall be when thou wilt ease thyself abroad, thou shalt dig therewith and shalt turn back and cover over that which cometh from thee;
>
> 14. For the Lord thy God walketh in the midst of the camp, to deliver thee and to give up thine enemies before thee; therefore shall thy camp be holy; that he see no unclean thing in thee, and turn away from thee.

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[a] Indebtedness is acknowledged to Brig. Gen. Jefferson R. Kean, M. D., and to Lieut. Col. Louis C. Duncan, U. S. Army, retired, for considerable contributions to the text. Acknowledgment is also made of the utilization of historical material rendered available by the researches of Col. James L. Bevans, M. C., and those of Lieut. Col. Fielding H. Garrison, M. C.

Military surgeons appear to have accompanied the armies of all the ancient civilizations. The histories of Greece and Rome are well worth study in this connection. Going back into the domain of legend, it is interesting to note that Homer's knowledge of war surgery was such that Frölich regarded the poet as a military surgeon.[2] Be this as it may, in Xenophon's writings we enter the realm of historical fact, for this historian mentions the medical service in several of his books. Xenophon's account of military medicine in the *Cyropædia* is regarded, however, by the classical scholars, as the expression of an experienced general's ideal of what such a service should be rather than as a true picture of anything actually existing in Persia in the sixth century B. C. Cyrus, the model king and commander, is made to say that he provided his army with the most skillful practitioners he could find. In the *Hellenica*, Xenophon tells how Jason attached his mercenaries to his service partly by the care with which he had them tended in sickness.[3] On the expedition of the Ten Thousand (415–400 B. C.), it is related that the troops suffered much from cold, hunger, and overexertion and from constant attack by the enemy; snow-blindness and frost gangrene were noted. At one halting place eight surgeons were commandeered to treat the wounded. In the *Anabasis* we read that Ctesias accompanied Artaxerxes to the battlefield of Kunaxa as his physician. In the *Cyropædia*, Xenophon recorded that Cyrus said to his father, Cambyses, that even as States that wished to be healthy elected a board of health, so he took with him, as did other generals, men eminent in the medical profession. Cambyses, in reply, likened physicians to the menders of torn garments, and pointed out that to prevent troops from getting sick a healthy camp site should be chosen, and that such localities were best found by inquiry among the inhabitants and by noting their physique and complexions, whether healthy or otherwise.

Aside from the accounts found in Xenophon's writings, one of the first authentic records pertains to Greece, and dates from the Persian wars, about 450 B. C.[4] This is an inscription discovered at Dali in Cyprus. It is shown that certain physicians went, as volunteers, with the men of Idalion on an expedition to repel a Persian raid.

In these ancient armies disease often spread widely, practically uncontrolled, and many a military disaster is known to have been due to pestilence among troops.

The Greeks by this time had developed a fine system of physical training and cult cleanliness,[5] and this, doubtless, was reflected in the physical fitness of their troops.

Alexander was accompanied by the best known medical practitioners from all parts of Greece. His comparatively small army seems to have been relatively free from disease. The cause for this state of affairs is hidden by the mist of antiquity. One explanation which has been offered is that the sites of his camps were frequently changed.

Historical records are available in some detail in respect to the sanitary rules of the Romans during war. According to Vegetius,[6] the Romans took great care that the men should be well supplied with good water, good provisions, firewood, and a sufficient quantity of wine, vinegar, and salt. They endeavored to keep their armies in good health by due attention:

1. To *situation,* avoiding marshes and dry uncovered ground in summer; having tents; frequently changing camps in summer and autumn.

2. To the *water,* for bad water was considered to be very productive of diseases.

3. To the *seasons,* not exposing men to heat in summer; in winter, taking particular care that the men never were in want of firewood or of clothing.

4. To *food and medicine,* the officers seeing that the men had their regular meals and were well looked after by the commissariat.

5. To *exercise,* by keeping the troops during the daytime in constant exercise, in dry weather in the open air, in time of rain or snow under cover; for exercise was believed to do a great deal more for the preservation of health than the art of physic.

Roman soldiers are said to have enjoyed excellent health, and, as compared with other armies of the same period, it is fair to surmise that this was true, although no figures are available for proof. Nor have we figures showing the health of Roman soldiers as compared with that of Hebrews of approximately the corresponding period. Modern sanitation takes into account both the resistance of the individual and the limitation of spread of disease from man to man by preventing contact of sick and well. For the former we can refer back to the Greeks and Romans, especially Romans, and for the latter to the Hebrews. Of course, the practice of each was empirical; and with their lack of exact scientific knowledge their results could not have compared favorably with those of any efficient modern army; it is of importance, however, as showing that hundreds of years ago there were nations which appreciated the value to their armies of good sanitation, and which put into practical effect measures to secure it. Doubtless, as is the case to-day, this could be done only at the expense of considerable extra work and interference with military efficiency for the time being. They must have thought, therefore, as we do, that both were justified by the better results which were ultimately attained.

In the Roman armies, the medical service was well developed. From Livy we learn that the Roman armies, after a battle, took their wounded with them when possible, often staying with them until they had recovered.[7] In the Etruscan wars, the Romans distributed their wounded among patrician families to be cured, the noble Fabian family having become popular by doing most in this respect. An unpopular Roman commander, whose troops fought indifferently to injure his reputation, could gain their favor and support by displaying unusual solicitude for his wounded. The soldiers at Lucerina (548 B. C.) would not fight because fatigued, and were kept awake by the groans of the near-by wounded and dying. An epidemic in camp is said to have had the same disastrous effect upon morale. Marcellus could not follow up his victory over Hannibal on account of the great number of wounded on his hands; while the Carthaginians in Africa drove away their own soldiers, panic stricken by defeat and wounds, in order not to demoralize the better disciplined part of their line in action. In the second Punic War (218 201 B. C.) velites, or lightly armed soldiers, were employed, 1,200 to a legion, to transport the wounded from the field.

Regular medical administration in the Roman Army had its beginning in the reign of Augustus Cæsar (31 B. C.–14 A. D.),[8] who reorganized the military service and created a standing army of 300,000 selected men, with long terms of enlistment, the prætorian cohorts, who occupied and guarded Italy. In the reign of Trajan (92–117 A. D.) the medical organization of the army was about as follows:[9] Each cohort (700–1,500 men) had four surgeons (medici cohortis); each legion of 10 cohorts (7,000 men) had in addition medici legionis or legionary physicians, probably 10 in all; the prætorian cohorts had apparently a medicus clinicus or special internist for the sick. To the stationary camps were attached a camp surgeon (medicus castrensis) and a valetudinarium or optiones valetudinarii who ranked after the centurions. The hospital to which others were added when there were more than three legions in camp was placed at a distance from the farriers (veterinary hospitals) and smithies. Even before Trajan and Hadrian, every closed formation, every warship, every cohort, had attached to it a medicus, and about 218–201 B. C. medici vulneraii, or wound surgeons, are first mentioned as attached to certain formations. Sick and wounded soldiers became objects of great solicitude, commonly visited by the emperors in their tents. Alexander Severus held that the emperor should care more for his soldiers than for himself, since upon their welfare hinged and hung the welfare of the State.

The individual soldier carried bandages which served as a first-aid packet. Wagons are mentioned as having been in use as ambulances. Good and bad Roman rulers alike seem to have sought to win the favor of their troops by giving them the best medical care available at the time.

While the fall of the Western Empire (A. D. 476) carried down with it the efficient medical service which had been carefully built up in the west, the army medical organization was much further elaborated in the east, in the Byzantine Empire. In every troop of 200 to 400 men, 8 or 10 stout fellows (deputati) were deputed to ride immediately behind the fighting line to pick up and rescue the wounded. Now, probably for the first time, male nurses (nosocomi) were attached to military hospitals, which were numerous and of different classes. This was before 600 A. D.

It is interesting to note that, according to the historical records, military medical service at the beginning was not developed through dictates of humanity but as a means of increasing military power. Human sympathy was not lacking, however, even in those times. Xenophon related that Cyrus and his physicians cared for the enemy wounded as well as his own, and certain Greek and Roman matrons are said to have borne the title of Mater Castrorum.

Little is to be recorded concerning the practice of military medicine during the long period between the fall of the Roman Empire and the time of Queen Isabella of Spain, who first introduced into warfare a broad humanitarianism toward ill and injured soldiers.

THE DARK AGES.

Among the Teutonic tribes, as recorded by Tacitus, care of the wounded was in the hands of women, and such rude medicine and surgery as the chiefs could acquire was learned from so-called "wise women" and "wild women," the prototypes of the Valkyries, who looked after the welfare of the heroes and bore them to Valhalla when slain in battle.[10] As the feudal system developed, the wives of the nobles and other great ladies of the time took upon themselves nursing and healing functions. At the same time, after the fashion of the Indian kings, of Alexander the Great, and of the Roman Emperors, all great personages, whether king, pope, or over-lord, began to attach to themselves learned and skillful physicians, who accompanied the warriors on their campaigns. The Crusades (1096–1250) occupied Europe for nearly two centuries, and the knightly spirit engendered by them led to the organization of definite societies for the care of the sick and wounded, notably the Knights Hospitallers of St. John, the Teutonic Knights, and the Knights of Malta. The St. John Ambulance Association of Great Britain is a more or less direct descendant of the Knights of St. John of Jerusalem. Its activities in supplying partially trained enlisted personnel to supplement the Royal Army Medical Corps in war are well known and of recognized value. Otherwise none of these orders has now any medical function.

RENAISSANCE.

Queen Isabella, consort of Ferdinand, King of Spain, first established field hospitals and ambulances on a large scale.[11] Of the siege of Alora (1484), the Spanish historian, Hernando del Pulgar, wrote: "For the care of the sick and wounded the Queen sent always to the camp six large tents and their furniture, together with physicians, surgeons, medicines, and attendants, and commanded that they should charge nothing, for she would pay all. These tents were called the Queen's Hospital." On the surrender of Malaga, 1487, the Spanish Army on its entry was followed by the Queen's hospital in 400 wagons, *ambulancias*. Nor were these the only occasions on which this hospital did good service. The Queen herself frequently visited the wounded, and when it was hinted that this was contrary to Castilian etiquette, she is said to have replied: "Let me go to them, for they have no mothers here, and it will soothe them in their pain and weakness to find that they are not uncared for." Queen Isabella's plans were followed and elaborated by Maximilian the First, and by his and her grandson, Charles the Fifth.

Maximilian the First not only organized the Landesknechte along military lines, but wrote medical regulations of great interest to us. Frölich says that Maximilian's organization represents the origin and basis of medical department principles of all later German organization to his day.[12] Many of these Landesknechte regulations are known to us from a treatise on imperial courts-martial, written by Leonhard Fronsperger in 1555, which, fortunately, included sanitary rules.

At the siege of Metz, in the army of Emperor Charles the Fifth (1552), whose medical arrangements represent the developed plans of the Landesknechte, it was the custom to send the sick and wounded to the trains where they were cared for by barbers and women. The Landesknechte paid a hospital superintendent to look after the hospital, care for the sick on the march, and wait on the medical men. There was for each Hauffen, which constituted 5,000 to 10,000 infantry, a field physician and there was an assistant field physician with the chief of artillery. These men had pay and rank assimilated to those of high officers. To each independent troop and to each company of 200 men, as well as to each squadron, there was a field barber, who, when not in ranks during battle, was the rear guard, and who ranked somewhere between a quartermaster sergeant or clerk and a corporal.

The following quotation from Fronsperger is used by Heizmann in his discussion of the siege of Metz:[12]

> The physician in chief must have been a doctor, or one who had recently charge of surgeons or field barbers by State authority; he must be a well-known, skillful, experienced, and cautious man, of the proper age, upon whom all barbers, cutlers, wounded, sick, and stricken could rely for help and counsel in time of need, particularly when they are shot, cut, bruised, or broken, or are suffering from any accidental or disabling diseases, such as scalds, fluxes, fevers, and similar affections that occur among soldiers. His duties are even more extensive in that he should inspect, both when the regiment is organized and later at monthly muster, the instruments and everything pertaining thereto, and when he finds anything lacking or lost, such shall be charged to the field barber, to make up the deficit. When this can not be done, he shall find other means to meet emergencies. On the march he will closely attend his commanding officer. When exigency or peril impends from the enemy, in battle array or skirmishes, and such like, he shall remain in the neighborhood of his superior military officer, but he will also oversee as much as possible the other physicians, surgeons, and the like, wherever wounded, etc., are to be attended, and he shall devote his care, advice, and skill to all others, prticularly because he, above others, is ready with instruments, apothecaries, and medicines for both internal and external wounds and sickness.
>
> He should also with diligence advise a leg, arm, or such should be amputated or preserved by other means. Further, he should give his attention to the severely wounded, that they may not be left too long on the lines or in the companies, but immediately carried to the surgeons and aided by beneficial dressings. On the march, when it becomes important to have a field barber near at hand or available, it is his business to see that one is stationed between the cavalry and infantry, with his instruments. On other occasions, in camp and quarters, each barber remains with the troop in which he has been assigned for duty. Whenever a question arises between barbers and cured soldiers or others as to the payment to be made, he shall settle it, seeing that neither too much nor too little is given.
>
> As it is necessary that a field barber or surgeon serve with each troop, so should each captain be careful to select a well-versed, skillful, experienced, and trained man, and not a poor beard shaver or bath boy, as often happens by reason of favor; thus the killing or maiming of good soldiers may be prevented. The field barber should be supplied with all necessary medicines and instruments in a field wagon, and the captain should see that it is done. He should be a capable knecht, to help in necessity. His duty is to render assistance first, when there is need, to those of his own troop, not to exact too much from anyone, but to treat men at reasonable and like rates. He shall have his lodging at night at the company pennant, so that he may be found in necessity, and it is best that one barber should be accessible to each lodging house on account of the sick and wounded. He shall serve with his troop in all else like an ordinary soldier, and he shall receive double pay.

The Duc de Guise, who occupied Metz while it was under siege by Charles the Fifth, also made many medical arrangements. In advance he furnished money to the surgeon barbers to enable them to make preparations for the sick. The sick and wounded were carried to hospitals. He placed the city in good sanitary condition, according to the teachings of that day, and isolated those sick with contagious disease. In the French Army of his time, medical men "were attached to the persons of great captains and nobles whom they followed and upon whom they depended. In the interval between campaigns, surgeons went back to their civil pursuits." Their duty was to look after their patrons first, higher ranking officers next, and down the list until the soldier was reached—if he was reached at all. The medical care received by the soldier apparently depended a good deal upon the individual commander and to a less extent upon the particular surgeon concerned. Indeed, most of such aid as he received from time to time came from quite different sources—from the barber surgeons, from irregular practitioners of medicine who were often found in the rabble of camp followers, from women who served as nurses on occasion, and from civilians having no military connections.

The name of one military surgeon stands out far in front of all others of this time. It is that of Ambroise Paré. He was born in 1510 and died 80 years later. During the years of his manhood, his country, France, was almost constantly at war, and in all of these wars Paré participated.[13] After the siege of Metz he served as surgeon to the King. Paré was an intense individualist and not in any sense an organizer; yet through his wonderful professional abilities he was a potent factor in emphasizing the importance to armies of a competent medical service. He was so highly esteemed for his skill that his coming to a command was regarded as equal to a large reinforcement of troops. Perhaps this was best exemplified at the siege of Metz, in 1552, when the King, after considerable difficulty, managed to get Paré into the besieged city.[14] The next day Paré was received with joy by all the higher ranking officers, who assured him that now they would no longer be afraid of dying if they should happen to be wounded. It was to this class that Paré gave the greater part of his attention; indeed, he would probably never have been sent to Metz if it had not so happened that seven princes, a number of veteran captains and officers, and many other gentlemen were there. Paré, however, was far too independent and too privileged a character to brook restraint in the direction of his professional activities, and the fact that he was as highly esteemed by the soldiers as by the nobles indicates that the former shared his services with the latter, despite the conditions which prevailed at the time respecting the medical care of troops.

Notwithstanding their superior organization, the besiegers, the Spaniards, were apparently much more brutal to the common soldier than the besieged, the French. When the Duke of Alva, in command of the besiegers, represented to Charles the Fifth that his soldiers were dying at the rate of more than 200 a day, and that for this and other reasons there was little hope of entering the town, the Emperor asked what men were dying and whether they were gentlemen and men of mark. The reply was that they were all poor soldiers. "Then," said the Emperor, "it is no great loss if they die." Queen Isabella was apparently totally forgotten, as well as certain military lessons respecting the effect of good medical care of soldiers as insuring better military service by the whole army. From what has already been said on this subject, it is apparent that this was realized as far back as Xenophon's time.

Gustavus Adolphus of Sweden carefully developed the medical service, and his last campaign, in 1630, represents the height of his system.[15] He strictly regulated the rules under which he permitted his troops to plunder and to subsist on the country. Civil hospitals, not used for military offensives, were exempt from pillage. One-tenth of the spoil of each soldier went to the maintenance of sick and wounded in hospitals. It was the custom to leave the sick and wounded, with the heavy baggage, under guard of a small garrison, in the civil hospitals of captured towns. Wagons for carrying wounded were used by both armies during part of the Thirty Years' War.

The Parliamentary Army evidently had a medical service superior to anything which had previously existed in England. Besides the regimental surgeons and their assistants, there were usually two or three medical officers on the staff of the general to supervise medical administration.[16] Each surgeon of Cromwell's army was allowed £15 for the purchase of a regimental medical chest, £10 for a horse to carry it, and 2 shillings per day for the maintenance of the horse and attendant. Medicines for internal use were supplied by the apothecary general, while the surgeon general supplied those for external use. A certain proportion of the pay of a soldier in hospital was stopped to defray the cost of drugs. There were no mobile hospitals during the campaign, but it is recorded that Essex sent his wounded soldiers from Reading to London and that many sick men were billeted in houses and towns remote from London.[17] The seriously wounded were left in villages near the field of battle. During the First and Second Civil Wars the London hospitals were the only permanent places for the care of sick and wounded soldiers.[18] Finally, Parliament established two special military hospitals and placed them in the hands of parliamentary commissioners. In Scotland one hospital of 30 beds was expected to care for the sick from 10,000 troops. Women nurses were used, who, as a rule, were the wives or widows of soldiers. There were no orderlies.

The first stationary or base hospital was established by Richelieu, in 1630, at Pignerol, 70 miles from the front,[19] while in the same century regimental and general hospitals, camp infirmaries, and retreats for old soldiers were established both in France and England, notably the Invalides (Paris, 1676), and Chelsea (1682), and a sailors' hospital at Greenwich (1695).[20] Due to the interest of Louis the Fourteenth, the French Army at the battle of Seneffe (1674) was provided with 230 army surgeons, nursing personnel, and adequate material.[21] In 1683 an order was issued by the French Government which required that sick and wounded be lodged before officers.[21]

The following quotation is from the seventeenth century writings of one Diggs, a surgeon who fought in Cromwell's time:

> It were convenient to appointe certaine carriages and men of purpose to give their attendance in every skirmishe and incounter to carry away the hurte men to such place as surgions may immediately repayre unto them, whiche shall not only greatly incourage the souldior, but also cause the skirmishe to be better maintained, when the souldiors shall not neede to leave the fielde to carry away their hurte men. These were called among the Romans "Deputati." And this among other laudable Romane orders have the Spainards at this day revived and put in practice, whereby also they conceale from the enemie what losses in any skirmishe they have received.

EIGHTEENTH CENTURY IN EUROPE.

In the eighteenth century, armies were put on a much more definite status; [22] limited periods of enlistment, regular medical examinations of recruits, regular salaries of officers, government quarters for troops, a common daily ration, the military regulation of army hospitals and regular schools of military medicine, became part of the established order of things. Medical examinations of recruits were inaugurated in France in 1726; in England in 1790; Prussia commenced the same system in 1788. Louis the Fourteenth had revived regularly laid out camps of Roman model as early as 1667, but now treatises on sanitary details began to appear. Pringle wrote one in 1752; Brocklesby, in 1764; Munro, of Scotland, published one in 1764; and Colombier, another in 1772.[22]

Surgeons now gradually assumed a position equal to that of the physician, and training schools became necessary.[22] France established the first joint army and navy school in 1718, but separate ones for the army and navy did not appear until 1775. In Saxony one was opened in 1748. The first medical military school of Prussia was established in 1795 as a part of a general medical school. The Josephinum of Austria opened in 1784. The enthusiasm of some individual medical officer was behind nearly every one of these institutions. The first military medical journal was published in France in 1766

One of the outstanding accomplishments in the progress of military surgery during the eighteenth century was the establishment of the Royal Academy of Surgery of France in 1731.[22] Five of its seven original officers were military surgeons and one-half of its members were doctors of the army. Army and navy medical officers wrote more than two-thirds of the papers and observations in the first volumes of the proceedings of the society from 1743 to 1768.

During the War of the Austrian Succession there was present at the battle of Dettingen (1743) a shrewd Scotch officer, who, through the Earl of Stair, brought about an agreement that both the French and English military hospitals be regarded as neutral and immune from attack.[23] This officer was Sir John Pringle (1707–1782), who had been made surgeon general of the British Army one year before (1742) and who served until 1758. Yet the siege of Metz (1552), where something was done in the same direction, and the battle of Dettingen (1743), were by no means the only instances of a temporary agreement of this nature; no less than five, between 1743 and 1864, were placarded at the Berlin Exposition of Military Medicine in 1914.

At the Battle of Fontenoy (1745) the French had 60,000 troops with 40 surgeons. Surgeons were in the front line and the "ambulances," as the temporary hospitals of the battle field were called, were about 2,000 yards back from the first line. After the battle the wounded were carried on caissons and carts to cities about 20 miles away. Bagieu, of the French medical service at the time, wrote as follows:

> In the battle there is an ambulance hospital more or less within the reach of the place where an engagement occurs, where the surgeon major and other surgeons hold themselves in readiness. This is the first depot where wounded are collected, whence they are carried to hospitals in the nearest towns, and thence to cities farther removed when these become overcrowded. It is rare that surgical operations are performed on the field proper—that is, at the place where wounds are inflicted—and still more rare are amputations performed. The light wounded betake themselves to the ambulance station; the dangerously wounded are carried there on litters.

His comments are otherwise notable from the fact that, besides mentioning litters, he gave details of a wagon for carrying wounded, described a horse litter devised by Petit, and discussed transportation by water.

Puysegur in 1749 wrote a book on the Art of War and gave a map placing the "ambulances" 2,500 yards in rear of the front lines.[22]

In the British service in 1748, separate beds, clean linen, and trained nurses were provided for hospitals.[24] In 1793 relative rank was given to surgeons.[25] Surgeons serving in general hospitals were called staff surgeons, while army surgeons followed the fighting lines. Wounded were removed by pioneers and bandsmen under the supervision of the quartermaster. There was no wheel transportation for them worth mentioning.

The first garrison hospital in Prussia was a house in the Spandau suburb, set apart for the purpose in 1709. This became known as the Charité in 1726; and the Theatrum Anatomicum, founded in 1713, was expanded in 1724 to include a Collegium Medico-Chirurgicum.[26] Under the administration of General Holtzendorff, the first surgeon general of the Prussian Army, both these institutions were designated to train surgeons better for war service.

So far as Germany is concerned, the reign of Frederick the Great includes nearly all of the progress made in medical organization during the eighteenth century. Field hospitals in Frederick the Great's army were under well-known surgeons. Those who presided over the military surgeons in the field carried the titles of first, second, and third surgeon general.[b] In 1797 Frederick William the Second made a great advance by appointing a surgeon general of the army and director of field hospitalization, thus centralizing the authority in one officer.[27]

In the campaigns of Frederick the Great, his method of front and flank attack in close formation and volley firing at close range was thought to prevent rescue of wounded during battle. The old rule of the Brandenberg army was that no one should approach the wounded until the battle was over and victory had been sounded by the trumpets.

AMERICAN REVOLUTION.

(1775–1783.)

While from the beginning of our history as a Nation the Medical Department of the United States Army has great traditions in the line of professional attainments, of devoted service to sick and wounded, and of gallantry in action —in fact, in every direction so far as the work of individual medical officers is concerned—good medical department organization was of slow growth and did not flower till fertilized by experience in the Civil War.

The story of the Medical Department of our Army in our first war, the Revolution, adds nothing to that of its development to the stage when we entered the World War. Possibly one exception might be made to this statement, for the lack of medical organization in the Continental Armies demonstrated that no matter how skillful the doctors—and they were skillful for that time—their services were largely wasted with bad organization.

From the British we had inherited an organization which distinguished sharply between hospital surgeons and troop surgeons. Baron von Steuben, who wrote our first Army Regulations, in 1780,[28] maintained the distinction between surgeon, physician, and apothecary. These lines of cleavage operated seriously against a united medical department. But the jealousies of the different colonies were even more powerful in preventing a centralized administration, with all medical officers merely parts of a whole, working for the common good. The evils that existed from cross purposes were intensified by constant change. It should be noted that the difficulties were increased by shortage of medical supplies. Yet, with all its shortcomings, the medical service, as the result of bitter experiences, improved considerably toward the end of the Revolution. The failure of Arnold's expedition to Canada is generally ascribed to the miserable physical condition of his troops. They were poorly supplied in most respects, and disease had its way with them, little checked or controlled. Smallpox proved a terrible scourge. By the time of the Revolution, inoculation with human virus against smallpox was practiced, and several commands were inoculated with good results. Yet this procedure proved by no means an unmixed blessing, because the inoculated person had smallpox and in consequence was a danger to others. The soldiers got into the habit of inoculating themselves. This was prohibited in general orders.[29]

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[b] The very ancient distinction between physicians and surgeons was maintained and carried down to the days of our Revolution.

NAPOLEONIC WARS.

Late in the eighteenth century, as a result of the American and French Revolutions, it was recognized that the people had certain prescriptive rights and, in consequence, the wounded soldier came to have the same consideration that had been accorded him in the days of the Roman Republic and Empire. There was no disposition to deny this to him in the American Revolution, but ignorance of the means for doing so was fatal to performance. In the Napoleonic Wars, on the other hand, the means of performance were supplied through the efforts of that genius of medico-military administration in the field, Baron Larrey, surgeon in chief of Napoleon's Army.[30] A choir boy who studied medicine, he first served in the navy, but after meeting Napoleon at Toulon, joined the Army of the Rhine. The admiration of the two men was mutual, and they became fast friends. In fact, Larrey seems to have been one of the few men for whom Napoleon had real affection. Napoleon did not like desk officers; would promote none who had not served with troops under fire for 10 years or who had not been wounded in action. Larrey qualified here, as he had been thrice wounded; and in this particular, as well as in many others, he won the esteem of his chief. Larrey devoted his whole life to military surgery and to the welfare of the wounded soldier. He was constantly with Napoleon; and altogether served in the French Army 53 years, in 26 campaigns. He became professor at the School of Military Medicine at Val de Grace, founded in 1796, and wherever he happened to be in a quiescent period he set up a school of military surgery. His Memoirs of Military Medicine (1812–1817) is one of the great classics of the subject. It contains the first account of the excision of wounds with primary suture.

In spite of advances which had been made before his time, looking to the amelioration of the condition of the wounded in battle, Larrey found, when he joined the army, that the sanitary personnel and supplies were kept with the baggage train, from 1½ to 3 miles from the firing line, that high-ranking officers were carried back by their men; and that wounded soldiers in general were allowed to reach the train by themselves, or were transported back by comrades who should have been in the firing line. If the battle ended in defeat the wounded fell to the enemy; if it resulted in victory, servants, bandsmen, and camp followers brought them to the villages, using local transportation for the purpose. Larrey, noticing the delays which thus occurred in the transportation of the wounded to hospitals, reasoned that it would be better administration to take aid to the wounded than have them seek it. He then introduced his system of "flying ambulances," which immediately achieved a great success, and of which hundreds were eventually in action.[31] Regimental aid and fixed ambulance stations existed before that time, and the French Army, as a whole, did not adopt Larrey's plan. Nevertheless, it was the forerunner of the system of handling the wounded on the field which exists to-day.

The vehicles which Larrey introduced were of two types, each strong but light. They were drawn one by one horse and the other by two horses, and could go over rough country and practically to the firing line. With the necessary personnel they afforded both surgical treatment and means of evacuation for the wounded.

Baron Percy, at about the same time, organized a corps of litter bearers.[32] His men were trained and equipped for collecting the wounded during battle. He devised a wagon drawn by six horses which carried eight surgeons, orderlies, instruments, dressings, and litters. Halting in a sheltered place, his group gave aid to the wounded brought in by the litter bearers. By the beginning of the nineteenth century the French medical arrangements, with the support of Napoleon, had come to represent a combination of the ideas of Larrey and Percy.

While the British in the Napoleonic Wars, and much later, had nothing to correspond with the "flying ambulance" of Larrey—for the Duke of Wellington refused to approve the recommendations of his medical officers that it be adopted, on the ground that troops were hampered—they made certain advances in field medical organization which are worthy of record here. Sir James McGrigor, chief surgeon in the Peninsular War, established divisional hospitals in front and convalescent hospitals in the rear where men were received en route to the depot.[33] This is shown by his narrative on "The Retreat from Burgos," where he is said to have saved Lord Wellington from the mortification of abandoning his sick and wounded to the enemy.

In Napoleon's time it was still too early for scientific army sanitation. Indeed, nothing of value can be learned on this subject from his methods. As a matter of fact, Napoleon's armies suffered very severely from disease and, as a consequence, in military efficiency. In Egypt, plague was largely responsible for failure and a quietus was put on the Russian Army by typhus and smallpox. As was inevitable, the demand for more and more men in the later career of Napoleon resulted in very inferior recruits. As he well knew, the efficiency of his troops as he approached Moscow and Waterloo was much lessened by these physically unfit soldiers.

Napoleon's Louisiana expedition, which halted in San Domingo, is often mentioned as an example of an army that disintegrated through bad sanitation and, in consequence, overwhelming sickness.[34] Whatever his intentions, in a military way, may have been toward the New World, they ceased perforce on account of the fearful mortality in this ill-starred army; and because of conditions at home, it was never possible for him to send another expeditionary force from France.

It is perhaps fair to assume that while the use of the "flying ambulance" appealed to Napoleon as a military method of distinct importance in promoting the morale of troops, sanitation made no such appeal to him. Perhaps the results to be accomplished by it were, in the ignorance of the subject of that day, far too indefinite for that master military mind.

WAR OF 1812 AND WAR WITH MEXICO.

The War of 1812 was unimportant so far as medico-military tradition is concerned; nor did the war with Mexico, despite a reorganization of our

Medical Department in 1818 on modern lines so far as peace-time administration was concerned, bring much of value for the future. Records are readily available to show good service in that war on the part of individual medical officers; in fact, the conduct of the Medical Department as a whole seems to have been of a high order of merit, although its organization was scarcely better than in Revolutionary days. Not that there was the same amount of friction as in the earlier war. This friction seems to have been quite absent in the war with Mexico, which affords, rather, an example of poor medical service due to lack of medical personnel, plus inherent faults in organization. The Medical Department field organization was wholly regimental [35] and, as it proved, regimental medical complements could not be maintained at authorized strength. As a matter of fact, save a very small administrative force at headquarters, there were practically no medical officers except those assigned to regiments, and this was on a scale which to-day would be considered inadequate for even that purpose. Whenever it became necessary to establish a hospital, even one of the more permanent type, there was no way to staff it except to rob the regiments of medical officers, and this was done continually, with the result that neither regiments nor hospitals were adequately supplied.[35]

While the military accomplishments in the Mexican War were very great, especially considering our means available there, this was a very disastrous campaign, so far as sickness and deaths from disease are concerned.[36] The losses due to disease alone actually exceeded 33 per cent of General Scott's command. A good many reasons conspired to this unfortunate result. The command as a whole was poor physically, it was ill supplied, service was very hard, and, which was most important, the country was unhealthful—that is to say, prevalence of communicable diseases was encountered by troops serving there. Of course, just as with the French at San Domingo, it was far too early to combat disease scientifically, for nearly half a century was yet to pass before the cause and methods of transmission of the various infectious diseases encountered were actually known. Even so, on one important occasion at least, General Scott's army does not seem to have taken advantage of the empirical knowledge of that day of how to prevent disease. When his troops were about to return home, the medical authorities recommended that they march directly through Vera Cruz, without stop, to the awaiting transports, with a view to diminishing, as far as possible, the danger of contracting yellow fever in that plague-ridden city. This advice was not adopted, and yellow fever was introduced into the United States at several points by the returning troops.[37]

CRIMEAN WAR.

From the historical standpoint, the Crimean War is a most interesting one for study. Furthermore, its medical history, through excellent contemporaneous accounts, is readily available to the student, which is not the case to the same extent with earlier wars. Field hospitals by that time had been established in the British Army in response to necessity, and an ambulance service was now attempted.[38] Unfortunately, the heavy wagons sent out in the First Conveyance Corps failed to be useful and contributed their part to the dreadful conditions of medical service in that frightful war. During the Crimean War medical officers of the British service were commissioned in battalions and regiments and practiced about as did doctors in civil life. The hospitals were regimental,[39] with a colonel as governor, with a paymaster as treasurer, with a quartermaster in charge of stores, and with soldiers as nurses. The doctor was a visiting physician or surgeon without command, authority, disciplinary functions, or financial responsibility, and with little or no administrative supervision. The sick were carried from the line to the regimental hospital and from there to general hospitals improvised at the base.[40] At the general hospital at Scutari, confusion, chaos, and maladministration reigned, 2,500 patients being at one time under the care of 10 surgeons and 12 cooks.

The modern health movement, under the leadership of Sir Edwin Chadwick, had its origin in England just before the Crimean War. It then came to be realized by the public at large that sickness is one of the great afflictions and handicaps of the poor, and to lessen this became the purpose of Chadwick and his coworkers. The public health act of 1848 and the organization of the general board of health were the outcome of their labors.[41] At the beginning of the war the death rate from disease in the British Army in the Crimea was extremely high, and sanitary conditions and the state of affairs with respect to the care of sick and wounded were deplorable. A popular uproar of condemnation arose in England, where the public, through the recently inaugurated betterment work, had been educated in such matters sufficiently to expect reasonably good care for their troops, both sick and well. The popular outburst of indignation, combined with the realization on the part of the war office that existing evils must be corrected, led to the inauguration of changes for the better.[42] With these improvements the name of Florence Nightingale is firmly linked. The remarkable energy and administrative abilities of this nurse resulted in raising the standard of the British military hospitals until they were no longer comparable with those of the Dark Ages, but were on a par with the better civil institutions of their time. This bettering of hospital conditions, together with improvements in the living conditions of the army, resulted, in the latter part of the war, in better health conditions among British troops than among the French and Russians.

In view of the lack of knowledge at that time of the manner of transmission of infectious diseases, it is rather puzzling to determine just how a desire for better health in troops was transmuted into actual accomplishment. As a matter of fact, in the days of the Crimean War not much more was known of how to prevent disease in armies than in the days of the Roman legions. Vaccination against smallpox had come into general use, it is true, but this was the only important advance in knowledge of sanitation. Filth was thought to be responsible for the spread of all disease. This has been aptly called the era of the sanitation of bad smells. The dominant rôle of the sufferer or of the carrier in spreading many diseases was not recognized. Nothing was known of the spread of other diseases through insects. By diminishing the visible filth in the British Army, which had been living under horrible conditions, and by the necessary wider separation of man from man in order to accomplish this, the chances of contact infection were lessened, and this alone would be enough, perhaps, to explain the improved mortality rates. Better treatment of wounded and sick was probably another factor. If, in the process of hit-or-miss sanitation, the British had also drained the swamps, doubtless unwittingly they would have gained greatly thereby in the freedom, or comparative freedom, of their troops from malaria.[c]

The only measure of the results of British sanitation in the Crimea so far alluded to is based on comparison of their mortality rates with those of the French and Russians. So measured, they are relatively satisfactory. With all that was accomplished, however, the death rate in the British forces was still very high. A large part of the army was destroyed and a fresh force of younger men took its place. Soon after the war the great sanitary reforms of Lord Herbert took place in the British Army.

The French, during the Crimean War, are said to have had specially good stationary (general) hospitals in the best buildings in Constantinople. The difficulty with these large permanent hospitals at that time, however, was that, on account of lack of knowledge of how to prevent the dissemination of disease in them, they proved much more dangerous than the smaller hospitals, in which, of course, the groups were smaller, and in which, because of the smaller number of patients, contagious diseases were not so likely to be introduced.

The harrowing experiences of the Crimean War, and the improvements in the care of sick and wounded instituted toward the latter part of that struggle, seem not to have served to prevent similar undesirable conditions in the years immediately following that conflict. For the Battle of Solferino (1859), in the war waged by the French and Piedmontese under Napoleon the Third and Victor Emanuel of Italy against the Austrians under Francis Joseph the Second, was so fraught with suffering and inefficient care of the wounded that the description thereof by a Swiss eyewitness [43] resulted in the organization of the International Red Cross Society, with the announced object of ameliorating the sufferings of sick and wounded in war. This organization, effected at the first Geneva Convention (1864), again brings to notice the humanitarian motive as a potent factor in activating service to sick and wounded soldiers.

THE CIVIL WAR.

(1861–1865.)

Notwithstanding the work of Larrey and Percy, and the experiences of the Crimean War, no efficient and methodical system for handling the wounded on the field of battle had yet been evolved on the outbreak of the war between the States. The problem was then, as now, a most complicated one.

During the first year of the Civil War an efficient military organization was developed which was most perfect in the Army of the Potomac, under the inspiration of McClellan.[44] The Medical Department, however, did not share in this development, and remained much as it had been in the Mexican War. There was a small regimental personnel providing regimental first aid at the front.[45] There were base hospitals located in old buildings well back at the rear, but there was nothing to bridge the great gap between. Each regiment had one or two surgeons, a hospital steward, and a few men detailed from the regiment to act as cooks and nurses. The band was counted as a part of the regimental medical assistance in battle, but its services were of comparatively little value. Each regiment was supposed to have two or three ambulances, but these were under control of the regimental quartermaster and were driven by civilians, who seem to have been a drunken and disorderly lot who gave much trouble to the medical officers under whose direction they were temporarily placed in battle.[46]

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[c] The extensive draining of swamps which characterized Roman occupation of a country is said to have cut down the malarial rate to a notable extent, though it was not done for this purpose and the reason for the effect on disease was not appreciated until centuries later.

After battles the wounded who could not get to the rear on their own legs were slowly gathered into buildings adjacent to the field, where they received haphazard and inadequate care from the regimental surgeons who were detailed or who volunteered for the task. These collections of wounded are often spoken of in the reports as field hospitals, but they had not the organization, equipment, and mobility which are the distinctive attributes of such units at present.

So outstanding and obvious a need as ambulance companies and field hospitals could not escape the many acute and practical minds whose attention at this time was focused upon the problem of the rescue of the wounded. In General Grant's army, in his attack on Fort Donelson in February, 1862, four ambulance companies and four field hospitals were organized by Surg. H. S. Hewitt, United States Volunteers, for the operations of the attack, the ambulance companies being made from the regimental ambulances, and the field hospitals from the regimental medical personnel and equipment.[47] These were provisional organizations, it is true, but they demonstrated that the need was appreciated and the solution understood, if only certain ancient prejudices against medical field units under the control of medical officers could be overcome and these essential units could be established as permanent, trained military organizations.

In May, 1861, Dr. J. O. Bronson, of New York, urged on Gen. Winfield Scott the organization of an ambulance corps.[48] Bronson's letter was referred to the Surgeon General, but no further action seems to have been taken. On September 19, 1861, the surgeon general of Pennsylvania wrote to Surg. C. S. Tripler, United States Army, medical director of the Army of the Potomac, recommending the formation of an ambulance corps, and stating that he had much of the facilities for transportation on hand and could do so if the plans were approved.[48] At that time Tripler recommended the plan in question for the favorable consideration of the Secretary of War. No action was taken on the recommendation. In the early spring of 1862, a similar plan was submitted to the Secretary of War by a Mr. Charles Pfirsching.[48] Surgeon Tripler commented as follows when the matter was referred to him for an expression of his opinion:

HEADQUARTERS, ARMY OF THE POTOMAC,
MEDICAL DIRECTOR'S OFFICE,
Washington, March 6, 1862.

SIR: I have the honor to report that, in obedience to your instructions, I have examined the plan of organization of an ambulance corps submitted by Charles Pfirsching. However desirable a regularly organized ambulance corps may be for any army, it is too late now to raise, drill, and equip so elaborate an establishment as this for our service. There is nothing new in this plan, nothing that has not been thought of and well weighed years ago in connection with our own organization, unless it be the arsenal of pistols and hatchets with which the men are to be loaded. As we have no ambulance corps proper, an attempt has been made to instruct a certain number of men in each regiment in the duties appertaining to such a corps. An order providing for the drilling of 10 men and the band of each regiment to the ambulance service was issued from these headquarters on the 3d of October, 1861. This has been faithfully done, and we now have a tolerably well-instructed body of men for this duty. Instructions for the distribution and employment of these men during an action have been prepared by me and even submitted to General Williams, Adjutant General of the Army of the Potomac, for the action of General McClellan, some 10 days ago. I hope they will soon be printed and circulated. When that is done all necessary and practicable arrangements for the transportation of our wounded will have been made. I am, therefore, of opinion that the plan of Mr. Pfirsching is neither needed nor available for our service at the present time.

Very respectfully, your obedient servant,

(Signed) CHARLES S. TRIPLER,
Surgeon and Medical Director, Army of the Potomac.

This report of Surgeon Tripler was returned on March 7 to the Secretary of War by the Surgeon General (Finley), who fully indorsed the views of Surgeon Tripler.

William A. Hammond, the next Surgeon General of the Army, had the better vision, as shown by a remarkable letter written on September 7, 1862, to the Secretary of War, Mr. Stanton,[46] in which he called attention to the frightful state of disorder existing in the arrangements for moving the wounded from the field of battle. This letter, after more than 50 years, retains the vibrant tone of suppressed emotion as he mentions that 600 wounded were lying on the battle field of the Second Bull Run, fought 10 days before, and that many had perished of starvation and neglect.

What Surgeon General Hammond asked appears to us, at this date, to be surprisingly simple and obvious, namely, the organization of an ambulance service which should be placed under the control of the Medical Department. He mentions that such a plan had already been laid before the Secretary of War, but had been disapproved by the then general in chief, General Halleck. Fortunately, General McClellan, the commander of the Army of the Potomac, had a more open mind. On July 1, 1862, Jonathan Letterman had reported to him to be medical director of the Army of the Potomac.[49] He was only 38 years of age and had just received his promotion to the rank of major. It is not known what prompted Surgeon General Hammond to select this comparatively junior officer for so heavy a task, for the Army was crowded with the sick and wounded of the Seven Days' Fight, and in the retreat to Harrison's Landing on the James most of the medical equipment and supplies had been lost or expended. But the selection was most happy, in that it placed in the position of opportunity the man who was destined to make an advance in medical organization which was the greatest, perhaps, in history.

Letterman drew up at once a plan for an ambulance corps, simple, practicable, and immediately effective. It was organized with officers and men transferred on the spot from the depleted regiments of the line. A distinctive uniform and a simple drill were prescribed. This organization was announced in orders, apparently without reference to Washington, on August 2, 1862,[44] and was soon followed by a scheme for regimental medical service and the establishment of division field hospitals. The field hospital system was established by Letterman in a circular dated October 20, 1862.[50] These, taken together, made a complete, workable system which at once marked a new epoch in medical organization and placed the Army of the Potomac, in this respect, far ahead of any military establishment in the world.

The first trial of the new system was on the bloody field of Antietam on September 17, 1862, where the wounded of the army corps from the Army of the Potomac were promptly removed from the field and cared for, [51] in marked contrast to the experience of the wounded in the army corps from Pope's army. At Fredericksburg, where the confusion of defeat was added to heavy losses, the ambulance companies nevertheless did their work with smoothness and dispatch, and the wounded were quickly transported to the division field hospitals.[52] The medical director of the Sixth Corps reported that it "afforded the most pleasing contrast to what we had hitherto seen during the war."

Letterman's organization was soon adopted by the other armies of the United States, and was established by law in the spring of 1864.[53] Unfortunately, this legislation was only for the war army; after the war it disappeared from the statute books, from Army Regulations, and, apparently, from the memory of the Army, except among the older medical officers.

The complete history of Letterman's ambulance and hospital plan may be found in Part III, Surgical Volume, Medical and Surgical History of the War of the Rebellion, and in his "Medical Recollections of the Army of the Potomac." His system provided for an ambulance corps for each army corps, consisting of about 17,000 men, and a field hospital for each division, approximately one-third the size of an army corps. The number of ambulances allowed was very much greater than later, and generally averaged at least 1 to 150 men, or 200 to what would be a division (World War), instead of 48. Under this system wounded men were picked up promptly, carried back to field hospitals, and given such professional care as was then possible. The battle field was cleared of wounded men within 24 hours. For the first time in the history of the world the wounded were systematically collected, sheltered, and given surgical attention. The one thing lacking was an evacuation system behind the field hospitals. Wounded men were collected and carried to field hospitals, but between these and the great general hospitals far in the rear there was no general plan of evacuation. There was neither evacuation hospital nor a regulated system of evacuation ambulance companies, hospital trains, and boats. This was the incomplete feature of Letterman's scheme left for future medical officers to perfect.

Not entirely unrelated to the work of medical officers in the field was another unique order of that time bearing on the status of such officers. General Orders, No. 100, War Department, April 24, 1863, providing for the government of the armies of the United States in the field, contained this paragraph (No. 53): "The enemy's chaplains, officers of the medical staff, apothecaries, hospital nurses, and servants, if they fall into the hands of the American Army, are not to be treated as prisoners of war, unless the commander has reason to detain them." This is believed to have been the first general official recognition of exactly this type, of the exemption of medical personnel from capture as prisoners of war, a principle later established by the first Geneva Convention, which did not meet until 1864.

Scarcely of secondary importance to Letterman's field organization was the creation of medical inspectors. This was effected by an act of Congress approved April 16, 1862. At the head of the medical inspection service was a medical inspector general with the rank, pay, and emoluments of a colonel of Cavalry, who, by the act in question, under the Surgeon General was empowered to supervise "all that relates to the sanitary condition of the Army, whether in transports, quarters, or camps, and of the hygiene, police, discipline, and efficiency of field and general hospitals, under such regulations as may hereafter be established." It was further enacted "that there shall be eight medical inspectors, with the rank, pay, and emoluments each of a lieutenant colonel of Cavalry, and who shall be charged with the duty of inspecting the sanitary condition of transports, quarters and camps, of field and general hospitals, and who shall report to the medical inspector general, under such regulations as may hereafter be established, all circumstances relating to the sanitary condition and wants of troops and of hospitals, and of the skill, efficiency, and good conduct of the officers and attendants connected with the Medical Department." Another provision was "that whenever the Inspector General, or any of the medical inspectors, shall report an officer of the Medical Corps as disqualified, by age or otherwise, for promotion to a higher grade, or unfitted for the performance of his professional duties, he shall be reported by the Surgeon General for examination to a medical board, as provided by the seventeenth section of the act approved August 3, 1861."

Corps medical inspectors, who took into cognizance similar questions involving the corps concerned, also were detailed.

It will be noted that the medical inspectors were granted very broad powers by the act of Congress relating to the subject. These were by no means curtailed by the regulations published later as provided by the act. In fact, they were, if anything, somewhat extended. It is not believed to be necessary to go into further details here; all that is necessary for our present purpose is to invite attention to the fact that through these inspectors the Medical Department controlled sanitation, medical formations, and the fitness of medical personnel, with a machinery to get rid of the unfit.

For improvements made in the Medical Department during the Civil War, improvements which amounted to a change from haphazard bungling to a methodical and scientific administration, sufficient credit has never been given to Surg. Gen. William A. Hammond. The war was entered upon with a Medical Department conservative to the point of fossilization. Hammond put new life into it. He transferred hospitals from old hotels to new pavilions, inaugurated new and improved reports and returns, began a library, a museum, and a history of the war; he even advised the establishment of an Army medical school. He also placed Letterman at the head of the Medical Department of the Army of the Potomac, as we have seen, and supported him in securing the adoption of his epoch-making system for evacuating the wounded. The really magnificient results obtained by the Medical Department in the Civil War were due very largely to the efforts of these two men—Hammond and Letterman.

Before concluding this phase of the subject, one other most important point should be mentioned. At the beginning of the Civil War and for a considerable time thereafter, Army doctors in administrative positions apparently were quite at a loss in performing the duties incident to them. That is to say, they occupied themselves with professional services to the sick and wounded instead of exerting any control over their subordinates. Many accounts are to be found of the early days in which descriptions of amputations are given by division and corps surgeons during battle, at the sacrifice of time which should have been devoted to the running of the complicated medical machine, though of course this was not realized at the time. Larrey could do this, it is true, but he was a genius to whom the ordinary rules do not apply. However, conditions in this respect were corrected later. A very clear account of the duties of all the officers on duty with a corps medical department may be found in Part III, Surgical Volume, Medical and Surgical History of the War of the Rebellion (p. 903 et seq.). Strange to say, these duties were apparently not embodied in regulations. As a matter of fact, the definition of the duties in question was given in reply to a circular sent by the medical director to the Army of the Potomac to the medical director of the Fifth Corps, directing him to secure reports of his duties from each of the officers concerned.

One curiosity, as we see it now, of Civil War medical department organization was the employment of acting assistant surgeons (contract surgeons) in large numbers, both in the field and in hospitals. Many of the great general hospitals were near large cities, and their medical and surgical professional staffs were often made up wholly of acting assistant surgeons. This was part-time work, the individual local doctor so employed maintaining his own private practice at his home and at the same time giving some hours of each day to his Army hospital duties. Many of the doctors who so served were distinguished members of the profession, whose services proved of great value from a purely professional standpoint. In fact, some of their contributions to medical literature were the most brilliant published as a result of Civil War experience in treating sick and wounded. The plan, however, made no permanent impression, for it has never been imitated in any army at war. This refers to the general employment in war of doctors as contract surgeons at their own homes for part-time work in great hospitals or for duty with troops in the field. Contract surgeons are still employed in our Army for certain special duties.

Mention has been made of the Civil War having forestalled the Geneva Convention in one important respect—nonretention of the medical staff as prisoners of war. Two commissions, forerunners of the Red Cross, were organized early in the war, the Sanitary Commission[54] and the Christian Commission.[55] These were volunteer bodies animated by the same spirit as the Red Cross. Both gave play to the sympathy of the public generally toward sick and wounded soldiers, and both did a great deal of good in this direction. Yet their relations toward the Army were not what to-day would be considered well ordered. After one campaign, General Banks complained that the Sanitary Commission had stolen his whole army. On this occasion, as well as on some others, the humanitarian zeal of the members of these commissions outran all else, with consequent serious inroads on military strength. Helpful as they were to sick and wounded in numerous instances, their independent status resulted in lack of coordination of effort with the Medical Department and in consequent confusion.

The subject of sanitation in Civil War history is by no means devoid of interest. By this time, in the march of events, the prevention of disease in armies had assumed more importance, both in the medical and in the military mind, but its actual practice lagged far behind, for definite knowledge of how diseases are transmitted was still lacking. The results obtained, therefore, could not be other than very disappointing. Perhaps the most important point of present-day interest which was brought out is how wholly unsatisfactory immature boys are as soldiers. The youth of many soldiers on both sides in the Civil War rather surprises one not acquainted with the facts. Save very exceptionally, it was found that these boys could not physically support the rigors of campaign. Not that this observation was a new one; it had probably been made centuries before. Certainly, as already stated, the demand for more men in the later career of Napoleon resulted in the calling out of youthful troops who were not physically in the class with his veterans, and who consequently, aside from other reasons, made far less efficient soldiers.

FRANCO-PRUSSIAN WAR.

(1870–1871.)

The Franco-Prussian War was characterized by an excellent medical service on the German side.[56] Apparently the Germans followed Letterman's organization very closely. The medical department of the French Army, on the other hand, broke down and was compelled virtually to turn matters over to the Red Cross.[57] A point well worthy of note is involved here in this connection. When the Red Cross was first organized, it was proposed that it act independently of contending armies; that is to say, that care be extended by it quite irrespective of the nationality of the sick and wounded. No system was evolved at first which would fuse the Red Cross of a nation with the medical department of its own army. The original plan was found impracticable in the first great war after its organization—France against Germany in 1870.

It soon became evident that Red Cross personnel could serve only with the army to which it was attached, except by giving aid to enemy prisoners of war. The status of the Red Cross respecting independence of the medical department of its own army was not settled so quickly. There was, however, a gradual change here, more rapid in well-organized armies and slower in those less well organized. The only great army in which the Red Cross worked more or less independently when the World War came was the Russian.

Unquestionably, the Medical Department of our Army owes a great deal to the Franco-Prussian War in so far as its modern organization is concerned. This was not apparent at once, however, nor for quite 30 years. No serious study of military organization was carried on in this country for a long time after the Civil War. As a matter of fact, it took the Spanish-American War to awaken us. By that time, the medical organization of European armies, based on the plan suggested by Letterman, improved by the Franco-Prussian War, and still further improved after the war by the different civilized nations seriously preparing for war, had approached present-day standards. In our new organization, we adopted it as it then existed, with modifications to suit our particular needs.

The Franco-Prussian War brought out another matter of great importance to the Army and to the Medical Department. The German mortality was reported to be so low that for the first time in the history of wars deaths from wounds exceeded in numbers those from disease.[56] For many years their results in this particular were set as a standard to be striven for. The outcome was more remarkable in the light of the status of preventive medicine at that time. Undoubtedly flaws could be discovered in the statistics of Prussian casualties in the Franco-Prussian War, yet it is none the less noteworthy that the well-organized German medical machine added very largely to the military strength of its army by good sanitation. France failed to utilize this military asset. For example, smallpox, which could be prevented then as well as now, made very serious ravages in the ranks of the French Army, while the Germans, through efficient vaccination, were relatively free from it.[57]

THE DAY OF SMALL THINGS IN THE UNITED STATES ARMY.

(1865–1898.)

After the disbandment of the Federal Armies in 1865, the Regular Army was rapidly reduced to the small nucleus of 25,000 men. It went back to its former conditions of service in small and isolated posts, mainly in the Indian country of the far West. The medical service returned to its peace organization, with a Surgeon General in Washington, a medical director for each geographical department, and a post surgeon, with perhaps an assistant or two, and a hospital steward, at each military post. The hospital was manned by a small enlisted detachment detailed from the companies on duty at the post. Such details were temporary in character and their duration usually depended upon the success of the surgeon in retaining the good will of the company commanders. Active military operations against the Indians were frequent and arduous, but were conducted by small commands, usually of Cavalry, the Medical Department of which was represented by a medical officer, one or two ambulances, and a few detailed soldiers. The post life of those days was usually tranquil and not unpleasant. The professional demands upon the surgeon were not large, although he had to be prepared to meet all of the medical and surgical emergencies of military and family life. During the major portion of this period there was no national interest in questions of military organization or preparedness. As a consequence, the Medical Department was too small to provide for other than routine duties, and even for these contract surgeons had to be employed to supplement the small medical staff.[58]

The Regular Army was self-sufficient through force of circumstances. The National Guard existed, it is true; but it was a thing apart from the Army. The organization of the Association of Military Surgeons in 1892, with a journal of its own, by the noted surgeon, Col. Nicholas Senn, M. C., National Guard of Illinois, gave a common ground for discussion of problems of mutual interest to medical officers of both Regular Army and National Guard. Years were still to pass before the medical profession of the country as a whole was to be interested in its military obligations.

This quiescent period lasted almost uninterruptedly until the Spanish-American War, a period of 33 years. Yet during this time some accomplishments in the Regular Army were of sufficient importance to be recorded here.

ORGANIZATION OF HOSPITAL CORPS.

A most important accomplishment of this period was the organization and development of a hospital corps, consisting of men enlisted solely for duty in the Medical Department, to replace the system of detailed cooks, nurses, and civilian personnel. This was done by act of Congress of March 1, 1887. The Secretary of War was authorized to enlist men for or to transfer them to the Hospital Corps, and to fix the number. The act also provided for hospital stewards and acting stewards. An act of Congress of March 16, 1896, fixed the number of hospital stewards at 100. There were at that time about 100 acting stewards and 500 privates.

The organization of a hospital corps was of basic importance, and its influence on the subsequent history of our Medical Department must not be overlooked. Before this was done, it was impossible, in peace, to make any real preparation for war, as the Medical Department had had no men to train, and in the absence of them there was a consequent limitation of the training of medical officers in this respect, since instructors learn by teaching. Certainly it was equally impossible to form essential Medical Department units when there were no Medical Department soldiers for them. The realization of these deficiencies in other armies had, by this time, resulted in the organization of hospital corps. Many of them had maintained service corps, it is true, which we did not. This fact has been a prolific source of mistaken statements about our relatively greater strength of Medical Department enlisted compared with Medical Departments of foreign armies. In most armies, other than our own, service corps constituted an actual part of their Medical Department at all times, thus materially augmenting their strength, without apparently doing so, this service corps personnel being carried as such and not being credited to the Medical Department. A misunderstanding of the above facts has led to the publication of figures showing our Medical Department enlisted strength to be relatively far greater than that of the armies of other nations, which is wholly misleading.

In Civil War days the enlisted force of the Medical Department at both front and rear came from the line. According to modern military opinion this was a wholly unjustifiable drain on fighting troops. One who has the curiosity to look into the matter may find numerous instances of line soldiers being retained for many months in hospitals far in the rear when they were perfectly able to serve with their own organizations at the front. Conditions in this respect were somewhat improved later, when the disabled men of the Veteran Reserve Corps became available at hospitals, but they were never entirely corrected; and until the end of the war the Medical Department, having no men of its own, continued to get them from the only source available—the line—to the very great detriment of the line, because of the inroads on strength and also because of its bad influence on morale.

ESTABLISHMENT OF THE ARMY MEDICAL SCHOOL.

The Army Medical School, projected by Surgeon General Hammond in 1862, was finally established at Washington in 1893.[59] The number of medical officers at the time was small (about 190); and the students, assigned to take the full course, were new officers entering the Medical Corps. The number of student officers was correspondingly small, varying from five to eight, during this early period. The course of instruction included lectures on and practical teaching in [60] the duties of medical officers in war and peace; military surgery, the care of wounded in time of war, and hospital administration; military hygiene; military medicine; chemistry; pathology; bacteriology; Hospital Corps drill, and first aid to the wounded.

For instruction in Hospital Corps drill, a small Hospital Corps company of instruction was maintained at Washington Barracks.[61] This company was originally created at Fort D. A. Russell, Wyo., and was used as a school of instruction for men enlisted in the Hospital Corps from civil life, as was a similar company at Fort Riley, Kans.[61]

Field service was not dignified by a special course of lectures at the Army Medical School. Sanitation was rightly emphasized, but the value of chemistry as applied to the training of medical officers appears to have been somewhat overestimated.

At about the same time the Army Medical School was organized other plans were put into effect for the better professional teaching of medical officers. The Surgeon General (Sternberg) stimulated a widespread interest in bacteriology among the medical officers of the Army [62] and facilitated their acquisition of material for the establishment of laboratories at the different posts; operating rooms were liberally provided; the equipment of post hospitals was brought up to date, and the practice of detailing certain medical officers for duty in large cities, to enable them to do postgraduate work, was instituted. In fact, every effort was made to stimulate medical officers in the exercise of their initiative for professional advancement.

MILITARY TRAINING.

In the latter years of this period some small maneuvers were held, but never by more than two or three regiments. In these the Medical Department participated in a way. Sometimes, too, the visit of an inspector to a post was characterized by a little maneuver in which the Medical Department was found, but so small in numbers that most situations had to be imagined rather than acted out. The only routine military work of the Medical Department was Hospital Corps drill. In this certain men detailed from line companies participated as company bearers. The drill consisted of marching with and without litters, of dressing, picking up, and carrying patients, and sometimes of loading ambulances, when the quartermaster in whose charge these were could supply animals to bring them to the hospital. Ambulances are spoken of in the plural, but, as a matter of fact, not more than one ambulance was ever found except at the largest posts.

From what has just been said it might be thought that the medical officer of the Regular Army of that day had no opportunity for military training as such, except for some elementary Hospital Corps drill. Incident to his life with troops, he acquired some valuable information here and there. He found out that being an Army doctor necessitated having knowledge of many things not concerned directly with caring for patients. He learned how to command men and became familiar with Army business methods. Primary knowledge of medical organization in war was required of him, and was enforced by examinations for promotion. He became a good, practical sanitarian for posts and small commands in the field. In these respects at least he had become a specialist.

EFFECT OF THE BIRTH OF SCIENTIFIC PREVENTIVE MEDICINE.

This period, though one of comparative inactivity in the United States Army, is notable, on the other hand, for being the most active one in all history in the progress of medical science. During this time the germ theory of disease was developed. Before Pasteur's discoveries practice in the prevention of disease, save for smallpox, was as wholly empirical as it had been with the ancient Hebrews and Romans.[63] Much had now been learned about the prevention of intestinal diseases in civil communities,[64] but that knowledge was insufficient when applied to armies in the field. We were on the threshold of insect-borne disease prevention, but that field of medicine was actually not opened up until just after the Spanish-American War.

During the period under discussion the discoveries in regard to pathogenic microorganisms had been utilized most extensively in surgery, with the result that the technique of clean surgery had been perfected. In military surgery, though the first-aid packet had been developed,[65] improvement in the technique of preventing infection in extensive lesions had not progressed far. This was equally true of similar surgical lesions occurring in civil life. Many years were yet to pass before wounds attended with great destruction of tissue were to fall under surgical control. This did not prove a matter of very great importance in the Spanish-American War, for few such wounds then came to treatment. While the treatment of infectious diseases, unfortunately, did not advance markedly with the discovery of pathogenic microorganisms, there was some progress in this direction; and diagnosis changed, between Civil War and Spanish-American War days, from a status of uncertainty to one of scientific precision.

THE SPANISH-AMERICAN WAR.

(1898.)

The experiences of the Spanish-American War were of great importance in the development of the Medical Department of our Army. Not because this war taught what to do; on the contrary, it taught most emphatically what not to do. But its lessons were taken to heart; and, based on them, plans were adopted later looking to avoiding for the future the mistakes then made.

The Report of the Surgeon General for 1898 affords a fair picture of the medical service in this difficult year. It is a record of unpreparedness, of vague aims, of hasty improvisations of all kinds, of little support from those higher in authority, of partial accomplishment, and of generally unsatisfactory results. This outcome was due to no lack of individual effort, zeal, activity, or energy. On the contrary, on reading the report in question, one can not but be impressed with the fact that, having such meager personnel and equipment, the Medical Department was able to accomplish what it did.

The Medical Department entered the war without adequate personnel, without sufficient equipment, and without even clear-cut plans on its own part and on that of the War Department. The war ended before these deficiencies had been remedied. Had it lasted longer order would have replaced confusion, as was true in the Civil War, but the end came before this was accomplished. Hence the many criticisms and strictures which followed. Thirty-three years without serious warfare or serious study of warfare had operated to the great disadvantage of the Army so far as organization for war was concerned. The Medical Department, in common with the rest of the Army, had been going on well enough in peace times, and that it could not do so under the greatly increased demands of war without greatly increased means did not seem to occur to those responsible for providing such means. There was lack of early appropriations for the Medical Department, lack of machinery for its war expansion, and lack of cooperation of the component parts of the Army itself.

The following information regarding the medical aspects of the Spanish-American War is taken from the Report of the Surgeon General for the year 1898. This report is the only printed authority in existence for most of the facts.

When the war began in April, 1898, medical plans of all kinds—had they existed—would have been hampered by lack of personnel and of money, and by an almost total absence of supplies for the field.

The number of medical officers, 192, allowed by law to the Army was inadequate in time of peace. This number included the additional 15 assistant surgeons authorized by the act approved May 12, 1898; and this, by the way, was all the regular Medical Department was increased in officer personnel. Later in May there were 13 vacancies. When the various other details had been provided for, but 100 regular medical officers were left for duty with troops. All volunteer regiments had three medical officers appointed by governors of States, or, in the case of United States Volunteers, by the President. Volunteer surgeons to fill the vacancies created by the act approved April 22, 1898, were appointed by the President; eight corps surgeons, with the rank of lieutenant colonel, and 110 division and brigade surgeons, with the rank of major, 5 of the former and 36 of the latter positions being filled by appointment from the Army Medical Department. Under provision of the act of Congress approved May 12, 1898, the services of over 650 contract surgeons were engaged.

By present-day standards approximately 2,500 medical officers would have been required for an army of the strength of that organized for the Spanish-American War. The actual number was far short of this at all times, and the shortage was apparent everywhere, especially in the field. This alone was fatal to efficiency. In by far the greater number of instances newly appointed medical officers and contract surgeons were wholly lacking in military experience. Nor was the anomalous position and small remuneration of contract surgeons one to attract the highest class of medical men, though it is but fair to say that among them were found many doctors who had given no thought to this and who, in entering the service, had been animated solely by a patriotic desire to serve.

On April 25, 1898, in connection with the call of President McKinley for 125,000 volunteers, the Surgeon General (Sternberg) asked for legislation to provide for the enlistment of 1 hospital steward and 25 privates for each regiment (about 1,000 men), 1 hospital steward and 5 privates for each battery of Artillery, and 1 hospital steward and 50 privates to serve under the direction of a chief surgeon of each division (about 10,000 men). Congress, however, merely suspended, during the war, the law which restricted the number of hospital stewards at any one time to 100, but limited them to 200. The act of Congress, approved April 22, 1898, authorized one hospital steward for each battalion of each volunteer organization received into the service. These were in addition to the 200 mentioned above. Reliance was placed on the original law of March 1, 1897, and General Orders, No. 58, Adjutant General's Office, May 31, 1898, for the enlistment in or transfer to Regular and Volunteer regiments of the desired quota of Hospital Corps men. Finally, about 6,000 Hospital Corps men were secured for the Army of 28,000 Regulars and 223,000 Volunteers, a proportion of less than 3 per cent. According to present-day standards there should have been approximately 22,500 Hospital Corps men. Similar shortage was everywhere apparent. It resulted in a number of instances in the detail of enlisted men other than those of the Hospital Corps to Medical Department work, thus taking them from their legitimate duties, to the detriment of the rest of the Army. In a report of Col. Charles R. Greenleaf, chief surgeon of the Army in the field, the statement is made that the Surgeon General, in order to get 5 per cent Hospital Corps, the proportion he estimated as needed, was relying in part on the line of the Army, line soldiers having received instruction in first-aid and litter-bearer work.

It should be noted that regiments had a larger medical personnel (3 officers and 25 enlisted men for a regiment of from 1,000 to 2,000 men) than did the regiments of 1917 (7 officers and 48 enlisted men to a regiment of about 3,700 men). They were needed, however, for from these detachments were taken almost the entire personnel for ambulance companies, field hospitals, and other field units, creating a condition of universal shortage, reminding one of the Mexican War.

Over 1,700 women nurses were employed on contract; first, only in general hospitals, afterwards at division field hospitals which, of necessity had been immobilized for the definitive treatment of sick, and thus, by the way diverted from their proper function of being ready to move with troops. This was due, of course, to the overwhelming number of sick to be cared for and lack of other provisions for them. While these nurses helped notably, it is now conceded that with a better organization their services could have been made of even more value.

Medical supplies had been provided for the then peace strength of the Army—28,000 men—and were particularly adapted to post service. Prior to the war no funds had been available to collect a reserve. For months after the war began shortages were apparent, especially in field supplies. Certain of these shortages, notably tentage and ambulances, were in articles provided by the Quartermaster and not by the Medical Department, it is true, but it was equally true that, in common with the rest of the articles needed by sick and wounded, there was a lamentable lack here. Colonel Greenleaf, in speaking of the conditions when the forces were mobilized and when an attempt was being made to organize medical field units, said: "There was lack of material with which to work—tents, ambulances, litters, medical and surgical chests, and a variety of materials absolutely necessary to the establishment of hospitals was not manufactured."

One hospital train was put into service and did good work up to the limit of its capacity. Three hospital ships were finally provided, but only one, the *Olivette*, extemporized for hospital purposes from a water boat by the equipment of a division field hospital, was available at the Battle of Santiago. A hospital ship was asked for on April 15; this request was complied with by the purchase of the *John Englis*. Renamed the *Relief* after being refitted by the Quartermaster Department, she sailed from New York on July 2, arriving at Siboney on July 7. The third hospital ship, the *Missouri*, after refitting, sailed from her home port on August 23.

The Volunteer Army was organized with the corps as the principal administrative unit. An Infantry corps consisted of not more than 3 divisions, 9 brigades, 27 regiments. Usually it was composed of 2 divisions of 9 regiments each. In numbers it was never larger than the typical 1917 division. The general plan for field medical organization was approved by the major general commanding the Army and was put into operation on May 20, 1898. As conditions varied greatly, it was provided that the corps commanders could vary the plan to suit special circumstances. The result of this was a lack of uniformity in the ambulance corps and field hospitals. Each corps surgeon followed his own ideas, possibly patterning, in a very general way, after the plans of Letterman. As a rule, in each corps, three or four division hospitals were organized. A circular from the Surgeon General's Office, dated May 18, 1898, gave some meager directions to medical officers placed in charge of hospital and ambulance units. As no table of organization existed, each corps surgeon was left to his own devices and secured his personnel by transfer or enlistment, got what equipment he could beg, borrow, or take by main force, and improvised a field hospital for each division. General Orders, No. 58, 1898, provided for transfer of enlisted men to the Hospital Corps, and General Orders, No. 76, laid down some rules as to equipment, such as ambulances and tents. Regimental commanders made the Medical Department a dumping ground for undesirable men of whom they wished to be rid; in addition, regimental surgeons generally were opposed to division hospitals and resented the transfer of their men. The organization of field hospitals, therefore, was slow and difficult. Shortages in equipment were responsible for further delay and further difficulties. While the Surgeon General's Office seems to have appreciated the disadvantages of regimental hospitals, popular sentiment, based on ignorance, made it almost impossible to do away with this archaic organization. As stated elsewhere, division field hospitals were so largely lost to their proper purpose that few were available for such service. The general hospitals were rather better than the division hospitals, but their lack early in the war resulted in the retention of patients in the division hospitals, other hospital facilities not existing.

Lack of equipment made it almost impossible to organize ambulance companies. Few were organized and few of these were complete.

The allowance of equipment for the field, as embodied in General Orders, No. 76, of June 22, 1898, seems to hark back to the days of 1861. Ambulances were authorized in the proportion of one to each 400 men; wagons, one to each 600 men. The allowance of hospital tents was one for each six patients.

When 25 enlisted Hospital Corps men per regiment were authorized in May, General Greenleaf planned for each division (about 10,000 men to a division) a division hospital of 200 beds, with six officers and 99 enlisted men. He also planned an ambulance company for each division, with an allowance of six officers and 114 men to a company. A reserve hospital and ambulance company were also planned for each infantry corps of three divisions. When officers and men were transferred from regimental detachments to form these units, the detachments often approached the vanishing point in size. In a number of corps, the allowance for retention with the regiment was one surgeon, one hospital steward, and one private. Progress in carrying the plans for medical field organization into effect was noted by Colonel Greenleaf as early as May, but, as has been previously explained, even at the best was very slow.

Col. A. C. Girard, chief surgeon of the Second Corps at Camp Alger, Va., recounted the great difficulty he had met in securing and equipping the hospitals under his command. He did not mention ambulance companies, as he had none. In common with most of the chief surgeons, he organized a hospital company, or reserve hospital company, which was actually a sort of recruit or casual company, to be drawn on generally for hospital or ambulance personnel needs.

Col. R. S. Huidekoper, chief surgeon of the First Army Corps at Chickamauga Park, organized three field hospitals in June and July, 1898. Only the reserve ambulance company was organized. The departure of regiments, thus drawing hospital personnel, interfered greatly with efficiency, while division hospitals tended to become fixed and immovable. When, in July, 1898, the First Division moved to Porto Rico, Colonel Huidekoper wrote: "It was accompanied by the reserve hospital and ambulance company completely organized with 12 officers, 213 enlisted men, 24 ambulances, 20 Army wagons, and tentage and supplies for a hospital of 200 beds." Space will not permit a description of the hospitals of the other corps, except the Fifth, which were similar to those of the First and Second Corps. Generally the division hospitals, when organized, became camp hospitals on account of the great number of sick not otherwise provided for, leaving only the reserve units free to move with departing divisions.

THE SANTIAGO CAMPAIGN.

The military student naturally turns to the Fifth, or Regular Corps, which carried out the brief operations at Santiago, Cuba. Lieut. Col. B. F. Pope, chief surgeon of the corps, in his report, gives sufficient information for an intelligent understanding of its medical activities.

A provisional corps, made up chiefly of Regular regiments, was assembled at Tampa, Fla., in April, 1898. The troops had brought regimental hospitals with them, and these were expanded into improvised divisional hospitals. There were four of these, under command of Maj. M. W. Wood, surgeon; Maj. Louis A. La Garde, surgeon; Maj. A. H. Appel, surgeon; and Maj. George McCreery, surgeon, respectively. The organization of these hospitals was directed, but for lack of time was barely completed at Tampa. To provide personnel for them the regiments were stripped of their Hospital Corps men, only one steward and one private being left to a regiment. But with all this shortage created in regiments field hospitals had not more than five medical officers and 35 to 40 enlisted men each. Tentage was obtained in part from the commands at Tampa, but much of this was old and nearly useless.

Badly off as were the hospitals, the ambulance trains were in still worse condition. Two small trains were organized—one of 10 ambulances, secured from the regiments, and one of seven ambulances, obtained no one states how. When the expedition sailed it carried all four divisional hospitals, or a part of each. The sick left behind required some provision, which, in the absence of other hospitals, had to come from those accompanying the combat division overseas. All tentage except flies, all ambulances except three knocked down, all wagons, all mounts except one per officer, and much of the supplies, were left behind at Tampa. When the hospitals were landed in Cuba, not all their supplies could be removed from the transports, and there was no transportation with which to carry them from the beach. Only three ambulances had been landed on July 1; these were the only ones available on the days of the fights at San Juan and El Caney; 10 other ambulances arrived a day or so later.

With such inadequate equipment as was at hand Major Wood set up his hospital well to the front, and this was the only real field hospital during the Battle of Santiago. Major La Garde's hospital was set up at Siboney and did excellent work, but was more in the nature of an evacuation or rather base hospital. There is no report of Major McCreery's hospital having acted as such. Major Appel's hospital remained on the hospital ship *Olivette*.

The medical personnel in Cuba was pitifully small. The number of Hospital Corps men proved so inadequate during the engagements near Santiago that the troops had to be depleted to secure litter bearers. In fact, no Hospital Corps men at all were available for such duty. Most of the wounded were carried to Siboney in springless wagons, in which straw was used as long as it held out. Their further journey home had to be in troopships, in the main, as hospital ships were available for only a limited number. Medical officers were found right up with the troops, however, and to their care and devotion may be ascribed the generally favorable outcome of wounds. Most of these, fortunately, were caused by the small bullet of the Mauser, so the first-aid packet was at its very best. Notwithstanding the many difficulties, the wounded, as a whole, did very well. As a matter of fact, it was the sick and not the wounded that proved the more serious problem.

Malaria and yellow fever in severe form attacked the troops as soon as they landed in Cuba. On August 3, the corps commander summoned all the general officers and chief surgeons of divisions to a conference. The unanimous opinion was expressed that the Army was in a deplorable condition on account of illness, and that to prevent its ultimate destruction its immediate removal from Cuba must be effected. The Army was withdrawn and the expedition thus came to an end. Fortunately, its main object had been accomplished.

In the Spanish-American War, notwithstanding the fact that good models of medical department organization were available to us, among them that of Letterman, which was the basis of all modern methods, we failed to avail ourselves of them in so far as the prevention of disease in troops was concerned. That is to say, by taking advantage of what was already well known, we could have created, in the Spanish-American War, a medical organization capable of repeating in this direction our triumphs in the Civil War. Regarding sanitation in the field in such a country as Cuba, the situation was far different from anything to which the Army was accustomed. Malarial and yellow fever were endemic there in 1898. Scientific knowledge of how to present them was lacking at that time, so they must have spread widely, irrespective of anything we could do. It was the same with typhoid fever in the camps in the United States. Previous to the Spanish-American War it was believed that typhoid was mainly a water-borne disease, and the natural presumption was that if good water could be supplied at camps they would be free from typhoid fever. Typhoid was widely introduced into the camps, however, for it was a much commoner disease throughout the country then than it is to-day. Within the camps it spread like wildfire, not generally through the water supply, but, as shown by the Reed-Vaughan-Shakespeare Board, by contact from sick to well, through the medium of the fly.[66] While the important part played by man-to-man transmission and by the fly as an agent in the spread of typhoid were established by these investigators, the rôle of the human chronic carrier was not appreciated at that time. The discoveries made by this board were of great moment, though their practical importance was minimized later through the development of the method of preventing typhoid fever by vaccination. Then, as now, the problem of respiratory diseases was a sealed book, but, fortunately, so far as these were concerned, the war was in summer.

One other point is noteworthy here. Between Civil War days and those of the Spanish-American War a considerable change seems to have taken place in military circles with regard to the need for physical fitness in officers and soldiers. Physical standards were apparently not considered a matter of very great importance in Civil War days. At least we know that many hundreds of unfit men were taken into the Army then. Complaints were very general of men who not only were unfit to fight but who served only to encumber the roadsides, and ultimately to fill badly needed space in hospitals. Nor, apparently, was any physical examination required on separation from the service. Conditions in both respects were much better during the Spanish-American War. While numbers of physically unfit men did slip into the Army then, this did not occur to nearly the extent that it did in the earlier war. For the first time in our service a physical examination was conducted on discharge.[67] Through this, evidence was provided for the adjudication of any future claims by ex-soldiers against the Government. This was not a matter having to do with military efficiency, to be sure, but it was of great importance from the standpoints of equity and economy.

Voluntary aid in the Spanish-American War played a not inconsiderable part in Cuba and at Montauk Point, to which the crippled Army in Santiago was brought. At these places it was almost lavish; elsewhere, its rôle was rather a minor one. Even when most generous, organization and cooperation with the Medical Department were lacking.

SOUTH AFRICAN WAR.

(1899–1901.)

The South African War apparently found the British almost as inadequately prepared for serious warfare as the Spanish-American War found us. Just as was the case with our Medical Department in 1898, their medical department was organized and administered for peace and for minor expeditions,[68] and when the strain of war came was not able to cope with it. Just as with us in the Spanish-American War, many medical officers did fine work individually, and a great deal was accomplished with what they had; but, as with us, they had far too little. Then, too, in South Africa, just as in our home camps in 1898, a frightful epidemic of typhoid fever occurred.[69] It was in the South African War that typhoid vaccination was first tried out.[70] While it was not a proved success then, its later development was based in part on this pioneer work. The reorganization of the Royal Army Medical Corps on modern lines dates from the South African War. That it was very successfully accomplished is manifest by its readiness for the World War. This reorganization involved no startling changes, but was based on the provision of adequate personnel, both officers and men, adequate supplies, sound education and training, and such additional authority for their medical department as would enable it to perform duties devolving on it by law and regulations. The South African War also had an important effect, to be noted later, on field medical organization. In the British service the first bearer company was improvised in 1879, and the first regularly organized company was seen in 1880. When the South African War began in 1899, the only field units were the bearer company and field hospital.[71] Of these, there was one of each to a brigade, with additional reserve hospitals for divisions and corps. There were also stationary hospitals with no evacuation (or clearing) hospitals.[71] Organized field service, with transportation plans, therefore, may be said at this time to have practically ended at the field hospitals. Back of them the wounded were handled by no definite organizations, though hospitals were established in the rear of field hospitals and on the lines of communication. Often these hospitals were improvised; usually they were fixed. From them the wounded were taken to the bases by hospital trains or other means.

Subsequent to the Boer War the British studied their Army medical service in the light of observations made and some important changes were effected.[72] Two of the most important of these were: The combination of bearer company and field hospital to form the "field ambulance" and the formation of an entirely new unit, the "clearing hospitals." The field ambulance was created by Army order of March, 1905, and the clearing hospital by Army Order No. 174 of 1907. One clearing hospital, with 102 officers and men and 200 beds, was authorized for each Infantry division of about 12,000 men. The clearing hospital was made the most advanced formation of the lines of communication; not an Army unit. Its functions were governed by Field Service Regulations, Part II.

RUSSO-JAPANESE WAR.[73]

(1904–1905.)

From the medical department standpoint the Russo-Japanese War was much greater and more important than the South African War. The Japanese medical department was well organized on German lines. It is curious that Letterman's organization went around the world to come back to us through a nation which, in Civil War days, had no army from the modern standpoint. From front to rear the Japanese had a well-organized medical department, superior to Letterman's in that the line of communications was well provided for. Evacuation from field hospitals was attended to by reserve medical personnel, as the Japanese term has been translated, but which actually constituted evacuation hospitals. Their organization and administrative details were carefully studied and were made use of in our subsequent regulations, but even more important was the lesson learned from their experience of what a great increase of numbers in medical personnel is needed for modern warfare. When the statement was first made in this country that 10 per cent of medical personnel would be required in serious warfare, few could be found who believed that this percentage was not excessive. At the same time, it was calculated that 1 per cent of the total personnel must be medical department officers. These estimates, established by Japanese experience, have certainly been borne out, and were regarded as essentially correct when we entered the World War. The Japanese, too, had a very clear idea of the value of the medical department in sustaining the morale of troops at the front, and carried it out by always providing surgical service at the front line, even at the considerable sacrifice of medical personnel due to the bullets of the enemy. While the exact methods are of less importance now, through discoveries made in the meantime, the Japanese, it should never be forgotten, set a very high standard of sanitation for troops. The importance of good sanitation was announced in military orders in somewhat the following words: "It is realized that the Russians have more men than we have. On the other hand, it is believed that we can save a great many men to the ranks through more effective sanitation than the Russians practice; therefore, in this way matters can be evened up." The actual sanitary accomplishments of the Japanese were of a very high order, save for one disease alone—beriberi—from which their Army suffered very severely. At that time the cause of beriberi was unknown, another proof that sanitation to be effective must be based on specific knowledge of how preventable diseases are to be combated and not on omnibus measures. Very possibly no army even yet has paid more attention to the instruction of the individual soldier in personal hygiene than the Japanese.

In the Japanese Army the Red Cross in war disappeared into the medical department, where it rendered very efficient service as a part of that department.

Practically nothing was learned from Russia's part in this war. Well equipped professionally as many of its physicians were, their services were largely frittered away through bad organization. Their army was probably the last, except the Austrian, to retain nonmedical officers in command of medical units, though regulations to put all such units under the command of medical officers had been published shortly before the war. It was then too late, for it was not to be expected that doctors could at once assume wholly foreign duties of a complicated nature without special training or experience. The independent status of the Red Cross resulted in a good deal of confusion.[d]

A unique opportunity was presented by this war to compare the influence on morale of a well-organized medical department at the front with an ill-organized one. The Japanese had a complete organization for each division, consisting of a regimental service, a large sanitary company, and four field hospitals (normal); the Russians had nothing of the kind. That is to say, in theory they had an organization which, while not exactly like the Japanese, should have been capable of giving a good account of itself. None of the links in the chain was missing in theory, but actually they lacked here and there in the majority, if not in all, of their corps and divisions in combat. At Mukden, while the Japanese medical department could be depended on to take care of wounded, this was not the case with the Russians. This resulted, notwithstanding the fine fighting qualities of the Russian soldier, in enormous losses in fighting effectives. In the sanguinary combat at Li-Kwan-Pou, for example, the Russians lost hundreds of unwounded men who escorted their wounded comrades to the rear, no medical department agency being on hand for this purpose. The Japanese losses in fighting effectives due to this cause were negligible.

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[d] Reference has been made to the fact that the only great army in which the Red Cross worked more or less independently was the Russian.

THE DAY OF LARGER THINGS IN THE UNITED STATES ARMY.

The period from the Spanish-American War to the World War was characterized by more serious military study and greater accomplishments in definite organization, with closer coordination of the various branches making up the Army, than any other like length of time in our history as a nation. Progress was as notable for the Medical Department as for the Army as a whole. In fact, with the former so much was crowded into these comparatively few years, many activities going on simultaneously, that it is impossible in this account wholly to separate these progressive activities one from another, at the same time preserving chronological sequence.

Organization of the General Staff.

The effect on the Medical Department of a revolutionary change made in the organization of the Army shortly after the Spanish-American War must be explained in so far as is pertinent to the present discussion. This change involved the creation of the General Staff,[74] whose paramount duty by law was preparation for war and the coordination, to this end, of the various elements making up the Army. Our previous history shows how revolutionary this change was. Formerly, in peace, there was absolutely no intelligent preparation for war, nor could there well be. In fact, despite a very high class of personnel, before the Spanish-American War the true objective of the Army had been lost sight of. Each branch of the Army independently did good routine peace work, it is true, but from the modern standpoint we had no army at all, neither did we have any plans for an army. Moreover, with the independent status of the various elements making up our land forces, even if one of them had worked out the best possible plans for war, this would have led nowhere because effective organization of any army is dependent on cooperation and not independence. Therefore, the departments concerned would have been quite at a loss as to what other branches would and could do—even if they were vitally affected—and there was no machinery for finding out. The General Staff coordinated the various branches of the service and prepared Field Service Regulations which governed the entire Army. This does not mean that the General Staff was responsible for all the improvements effected in the Medical Department between 1898 and 1917. However, it greatly stimulated the preparation by the Medical Department of plans for war. After these plans had been submitted to and possibly modified by the General Staff to meet the general plans, they were finally approved by it for embodiment, as far as possible, in regulations, thus giving certainty instead of uncertainty. The Medical Department still remained very largely dependent on its own exertions for everything affecting its interior organization and operation, including appropriations for its support, though, as always had been the case, all larger plans required the approval of the Secretary of War. As time went on, the successive Secretaries doubtless sought more and more the advice of the General Staff on such matters. For the great part of this time a medical officer was detailed on the General Staff, and usually had an opportunity to express an opinion on matters affecting the Medical Department.

The character of service as a whole for all medical officers differed totally in the period between 1899 and 1917 as compared with that before the Spanish-American War, for in the earlier time instruction for war was almost totally wanting, due to small posts, lack of opportunities, and even the realization of what modern warfare involved in the way of medical preparation. The very circumscribed field of medical officers then, as a matter of fact, is hardly realizable to-day. After the Spanish-American War and the acquisition of foreign territory, the field immediately changed to almost a limitless one so far as opportunities were concerned. These opportunities, it is true, did not constitute war experience, but the constant dealing with large affairs proved no mean preparation for war.

DODGE COMMISSION.

At the close of the Spanish-American War, President McKinley appointed a body, commonly known as the Dodge Commission, to investigate the conduct of the war.[75] During their investigation this commission made a careful study of the operations of the Medical Department and embodied their conclusions in seven recommendations, as follows: [76]

> What is needed by the Medical Department in the future is:
>
> 1. A larger force of commissioned medical officers.
>
> 2. Authority to establish in time of war a proper volunteer hospital corps.
>
> 3. A reserve corps of selected trained women nurses, ready to serve when necessity shall arise, but, under ordinary circumstances, owing no duty to the War Department, except to report residence at determined intervals.
>
> 4. A year's supply for an army of at least four times the actual strength of all such medicines, hospital furniture, and stores as are not materially damaged by keeping, to be held constantly on hand in the medical supply depots.
>
> 5. The charge of transportation to such extent as will secure prompt shipment and ready delivery of all medical supplies.
>
> 6. The simplification of administrative "paper work," so that medical officers may be able to more thoroughly discharge their sanitary and strictly medical duties.
>
> 7. The securing of such legislation as will authorize all surgeons in medical charge of troops, hospitals, transports, trains, and independent commands to draw from the subsistence department funds for the purchase of such articles of diet as may be necessary to the proper treatment of soldiers too sick to use the Army ration. This to take the place of all commutation of rations of the sick now authorized.
>
> Convalescent soldiers traveling on furlough should be furnished transportation, sleeping berths or staterooms, and $1.50 per diem for subsistence in lieu of rations, the soldier not to be held accountable or chargeable for this amount.

Attention was also called to the need of a special corps of medical inspectors (such as had been found necessary during the Civil War).[76] When Gen. R. M. O'Reilly became Surgeon General in September, 1902, he adopted these recommendations as the policy of his administration. How earnestly and successfully General O'Reilly devoted himself to the carrying out of this program is shown in the last annual report signed by him, that of 1908,[77] in which he took up these recommendations one by one and showed that practically all had been carried out.

As a matter of fact, as will be seen later, the Medical Department in these eventful years did not stop with these recommendations. Progress was far more notable than it would have been by slavish adherence to their text. Not only was advantage taken of our own recent experience, as outlined in these recommendations, but a serious study was made of the organization of the medical departments of armies, including our own in the Civil War. Then plans, so far as they would help us, were finally adopted.

The steps taken to carry into effect recommendations Nos. 1, 3, and 4 will now be discussed in detail. Such simple treatment of what was done relative to the other recommendations is not possible; but, as has just been explained, and as will be more apparent later in the course of the narrative, similar, though not so direct, action was taken to put them into effect. One need not search, however, for an account of any great simplification of paper work. Yet it will be seen that forms were changed to meet conditions, which was not the case at the time of the Spanish-American War.

A LARGE FORCE OF COMMISSIONED MEDICAL OFFICERS.

After the Spanish-American War the Army experienced a reorganization which was supposed to embody the lessons of the war. In accordance with act of Congress approved February 2, 1901, the Army was increased in size to a possible maximum of 77,287, and was modernized in many ways. The Medical Department was increased in numbers. The Army Nurse Corps was authorized. But, aside from this increase in strength, the Medical Department really benefited not at all by this reorganization. Surgeon General Sternberg had made carefully prepared recommendations, which were disapproved by the War Department, and for them was substituted an organization which not only failed to provide for the peace needs of the Army, but destroyed any hope of future development of the Medical Department for war. Apparently the act of 1901 expressed the opinion of neither the Secretary of War nor the President. This was shown by Secretary of War Root's recognition of its defects and by a fine indorsement of the bill prepared by Surgeon General O'Reilly, in 1904, to rectify its provisions relating to the Medical Department. The attitude of the President, Theodore Roosevelt, was expressed in a special message sent to Congress recommending amendment of this act, as follows:[78]

To the Senate and House of Representatives:

I have, in a former message, stated to the Congress my belief that our Army need not be large, but that it should in every part be brought to the highest point of efficiency. The Secretary of War has called to my attention the fact that the act approved February 2, 1901, which accomplished so much to promote this result, failed to meet the needs of one staff department in which all of our people are peculiarly interested and of which they have a right to demand a high degree of excellence. I refer to the Medical Department. Not only does a competent medical service, by safeguarding the health of the Army, contribute greatly to its power, but it gives to the sons who are wounded in battle or sicken in the camp not only skilled medical aid, but also that prompt and well-ordered attention to all their wants which can come only by an adequate and trained personnel.

I am satisfied that the Medical Corps is too small for the needs of the present Army, and therefore very much too small for its successful expansion in time of war to meet the needs of an enlarged Army and in addition to furnish the volunteer service a certain number of officers trained in medical administration. A bill which, in the opinion of the Secretary of War, of the late Secretary of War, and of the General Staff of the Army, supplies these deficiences was introduced at the last session of Congress, and is now before you. I am also advised that it meets with the cordial approval of the medical profession of the country. It provides an organization which, when compared with that of other nations, does not seem to err on the side of excessive liberality, but which is believed to be sufficient. I earnestly recommend its passage by the present Congress. If the Medical Department is left as it is, no amount of wisdom or efficiency in its administration would prevent a complete breakdown in the event of a serious war.

I transmit herewith a memorandum which has been prepared for me by the Surgeon General of the Army, and also the remarks of the former and of the present Secretary of War with reference to this bill.

* * * * * * *

THEODORE ROOSEVELT.

WHITE HOUSE, *January 9, 1905.*

MEDICAL DEPARTMENT REORGANIZATION OF 1908.

It was not until 1908 that a law was passed [79] which restored the number of medical officers to the same proportion of army strength which had existed approximately for 40 years, and also the long-established proportion in each grade, both of which had been seriously diminished by the act of 1901. These proportions, however, where not made automatic, and in consequence the Medical Department failed to grow with the various increases of the Army, until, by 1916, it had again become inadequate for the performance of its duties. By the national defense act of June 3, 1916,[80] which will be discussed at length later, the number of medical officers and enlisted men of the Medical Department, for the first time, was placed on a percentage basis, so as to increase or diminish automatically with the authorized strength of the Army, i. e., seven medical officers per thousand, and 5 per cent enlisted men, of the authorized enlisted strength of the Army, exclusive of the Medical Department. By the creation of a workable and efficient system of examinations for promotion, with the elimination of deadwood, the law of 1908 added greatly to the efficiency of the Medical Department and to its readiness for the great task which it was to undertake in the World War.

The deplorable condition which existed in the Medical Department in securing candidates for commissions (1901–1908), when the applicants finally approached the zero mark, was the subject of a good deal of comment in medical circles. The medical profession of the country had been pretty well stirred up, too, by the unfortunate occurrences in Spanish-American War days. On the other hand, the 1901–1908 period was characterized by epoch-making sanitary work by Army medical officers. This, of course, attracted wide attention from their brothers in civil life. So, as a very important result of the struggle to rectify conditions, due to the act of 1901, a strong bond of union was created between civilian and military doctors. Never since then has the medical profession of the Army been regarded as a thing apart, but rather as representing one of the specialties which constitute American medicine as it is practiced to-day. The civilian medical profession of our country also recognized then, perhaps for the first time in peace, that they had a special obligation as doctors, by virtue of their special knowledge of medical requirements, to use all legitimate means to insure that their representatives in the Army should be of such a strength, of such professional capacity, and so organized as to constitute a reasonable preparation in this particular for future war. That their interest in these subjects was a proper one is indicated by President Roosevelt's letter, quoted above.

THE MEDICAL RESERVE CORPS.

The law of 1908, however, went further than merely the improvement of the regular corps. By the creation of the Medical Reserve Corps, it brought the Medical Corps of the Army into still closer touch with the medical profession in civil life and prepared the way for the vast expansion which it was called upon to undergo nine years later, by which it grew from 445 to 30,591 medical officers, and the total personnel of the Medical Department to 281,341,[81] almost three times the strength of the entire Army a few years before the beginning of the World War. This was pioneer legislation, being the first integral volunteer reserve for war ever organized in our Army. Its advantages were soon appreciated and imitated, first by the Medical Corps of the Navy, and later by the Army through the national defense act of 1916, which adopted this principle for the line and all the staff departments. It is impossible to overestimate the importance of the creation of the Medical Reserve Corps, and only those who witnessed the confusion and inefficiency of the small Spanish-American War mobilization can visualize what would have happened without it in 1917. An early effect of this law, of great importance to the Medical Department, was brought about by a considerable number of the best-known doctors in the United States who, being commissioned in the Reserve Corps, exerted their influence in obtaining a very high class of candidates for the Regular Medical Corps.

RESERVE NURSES.

Much difficulty and little success attended the first attempts to organize a reserve for the Army Nurse Corps. A way was found through the ability and patriotic devotion of the superintendent of nurses, Miss Jane A. Delano, who conceived the idea that a common reserve for the Army and Navy might be organized through the agency of the American Red Cross.[82] She resigned her position in the War Department and devoted herself to this great work as a volunteer, without salary, until her death in France in March, 1919. Having the support and confidence of the nursing organizations and the nursing profession, she built up an admirable organization which had enrolled, when the United States entered the World War, over 7,000 nurses, and which supplied to the Army during the war nearly 18,000,[83] the character and qualifications of each being carefully investigated before appointment.

MEDICAL SUPPLIES.

One of the first questions studied after General O'Reilly became Surgeon General (1902) was that of medical supplies.[84] After a careful study of the evidence as to what was lacking during the Spanish-American War, it became evident that the majority of articles of medical supply could usually be obtained in the markets of the United States in sufficient quantity and that the shortage at the time of the Spanish-American War was due largely to lack of foresight and boldness in making purchases and to defects in the methods of distribution. Every article in the supply table was looked up to determine the available supply procurable within 30 days, and an estimate was made of the amount needed for armies of various sizes. The sources of supply were also investigated. Medical and hospital supplies were thus divided into two classes, of which the first and larger could always be obtained in the United States in sufficient amount, being the drugs and supplies habitually used by the medical profession. The second list comprised chiefly articles intended to meet the special requirements of the military service not kept in stock by commercial houses and requiring manufacture on order. These included, of course, field chests, field equipment, and the drugs and dressings specially prepared for field use. Of these a reserve supply for war was evidently needed, it having been found that the field chests ordered at the beginning of the Spanish-American War were not delivered by the contractors until after its close. These conditions of supply, although generally true, did not apply altogether to the quite abnormal commercial conditions which obtained in 1917, when the United States entered the World War. Available stocks in the world's market had been exhausted by the war demands of Europe, and prompt deliveries of even standard articles were difficult to obtain. Yet by the plans made it was possible to surmount even these difficulties.

In the year 1908 Congress made an appropriation of $200,000 for the purchase of field equipment.[85] Similar appropriations were made in the following years, so that in 1916 the Surgeon General's report showed the following units of equipment on hand:

Evacuation hospitals	20
Base hospitals	3
Field hospitals	44
Ambulance companies	41
Regimental infirmaries	131

These units were complete except that they were without transportation of any kind.

Another preparation for war which falls well under the present heading, as it had to do with supplies in respect to the shelter of the sick and wounded, was the preparation of building plans for temporary hospitals. These were published in detail by the Surgeon General's Office in 1906.[86]

FIELD MEDICAL SUPPLY DEPOTS.

With the beginning of General O'Reilly's administration a study was made of the field equipment on hand with reference to its storage and readiness for issue. That which was obsolete and unserviceable was eliminated. It was found that in the medical supply depots in New York and St. Louis, which were those especially depended on for current medical supplies in time of peace, the war supplies and field equipment were so mixed up with routine hospital supplies that promptness of issue was impossible. To separate the two classes at the New York medical supply depot, it was necessary to close the depot for several months to permit the employment of its personnel exclusively on segregation. It was soon determined, therefore, that efficiency demanded the establishment, for the field supplies, of depots separate from those for current issue in time of peace. A beginning had already been made under Surgeon General Sternberg by the organization of a field medical supply depot in Washington.[87] This principle was adopted, and was greatly extended during the first four years of General O'Reilly's administration; and a systematic plan was adopted for the assembling of regimental and field hospitals complete, with ordnance and all quartermaster supplies, including tentage, but excepting transportation.[87] Field medical supply depots were established at Washington, St. Louis, San Francisco, Manila, and, later, at San Antonio. These depots were prepared to issue, on telegraphic order, all equipment and supplies necessary for an expeditionary force of several divisions. Under succeeding administrations, the Supply Division of the Surgeon General's Office steadily advanced and developed in efficiency, until it was able to meet, with remarkable success, the vast demands and difficulties of the World War.

Prompt Shipments.

An amusing and unexpected result of this preparedness occurred when an expeditionary force was sent to Cuba in the fall of 1906. The medical equipment and supplies shipped by express arrived at the port of embarkation far in advance of any other supplies and naturally were stored in the farthest extremity of the warehouses at Newport News. The more slowly arriving supplies for the Quartermaster and Commissary Departments were piled up in front of them, with the result that when the transports were loaded those which last arrived, being nearest the doors, were shipped first and the medical supplies, which arrived first, were shipped last of all. In the World War, however, this same readiness of shipment stood the Medical Department in good stead, for its supplies, arriving at ports first, were shipped first, and found abundant cargo space in the transports, because the more bulky supplies of the Quartermaster Department were slower to arrive. Furthermore, at first the demand on cargo space was not so great as it was later, when troops with their equipment were shipped in great numbers.

Field Regulations and Tables of Organization.

At the time of the Spanish-American War no Field Service Regulations existed. With their publication and with that of other official publications based on them the recommendations of the Dodge Commission, so far as they were pertinent, were put into effect in a better manner than was or could be contemplated at the time these recommendations were made.

Field Service Regulations for our Army were first issued in 1904. They had been preceded much earlier by a small booklet, entitled "In Campaign." This was of little value for any purpose, and in it the Medical Department, to all intents and purposes, was totally neglected. In the first Field Service Regulations, however, the medical service was adequately treated. Besides the regimental allowances, four field hospitals and four ambulance companies were provided for each infantry division. Editions of the Field Service Regulations were issued from time to time. The last before the World War was published in 1914, and later corrected to April 15, 1917. Tables of Organization, first published in 1916, prescribed the organization for the Army. Before and during the war these tables were changed and amended as proved necessary. At first the Field Service Regulations included organization data, but later these were placed in the Tables of Organization, which were held confidential. With the succeeding issues of the Field Service Regulations and the Tables of Organization, some changes naturally were made in the text relating to the duties of the Medical Department and in its allowances. The subject is too large a one for discussion at length here. Yet it should be understood that the plan followed was to include in Field Service Regulations only such material relating to the Medical Department as was of importance to the Army as a whole. Matters of interest to the Medical Department only were found in the Manual for the Medical Department. The student is referred to these various publications for detailed information.

Of course, it was not permissible to allow the medical manuals to differ from the Field Service Regulations or from the Tables of Organization. In fact, in the later manuals the greatest care was taken to make sure that the medical officer in reading the manual would not be confused by even the slightest diversion from Field Service Regulations; however, as the latter were devoted to the division at the front, and as a great part of medical service in campaign has to do with the line of communications, in point of fact the medical manuals had to cover ground barely stirred by Field Service Regulations.

For those who have the curiosity and industry to study in detail the progress of medical organization in our Army in the 20 years before the World War, it may be of interest to look over the successive manuals of the Medical Department that were issued during that period. The thin volumes bearing dates prior to the Spanish-American War were written from the viewpoint of post administration solely; war was a contingency for which no provision was made beyond a few vague phrases and the provision for field chests for field service. In the manual published in 1898, the duties of medical officers in the field are given in one paragraph, and three are given to the duties of the Hospital Corps in war. The manual for 1900 gives two paragraphs to the regimental hospital in field service. That of 1902 shows a great step forward in giving the sanitary organization, personnel, and transportation for a division of 18,000 men, three field hospitals and three ambulance companies being allowed to it. By 1906 the manual had grown to larger size, and its treatment of field medical and sanitary service occupies 36 pages, exclusive of field supply tables. It covers fairly well the main principles of field organization and administration, and gives in detail the personnel, transportation, and tentage for sanitary units. Another very long step in advance was taken by the edition of 1911. Part II of this book is an admirable treatise on medical service in campaign, covering 81 pages, and bringing the whole subject well up to the date of publication. The duties of medical officers of all grades, the details of organization of medical units, the general scheme of operation of the Medical Department in war, and the lists of field supplies are all given in great fullness and detail. In the preparation of this edition of the manual, for the first time great pains were taken to reconcile all differences with Army Regulations and Field Service Regulations which had crept in from time to time.

The manual used during the World War was placed in the hands of medical officers just one year before we entered it. The Medical Department field service is little changed from the 1911 manual, but in this edition appears, for the first time, provision for the use both of organized and individual voluntary aid and a full discussion of the assistance which the American National Red Cross would be expected to give the Army, in accordance with the act of April 24, 1912. That the Red Cross did not create the exact units or function in exactly the way prescribed in the manual was due to its organization while the manual was in press, and to the rapid development of its military side during the year 1916, all of which is explained in detail subsequently. Although the Army underwent a reorganization during that eventful year, and many changes of administrative method were made in France, the 1911 manual, so far as it went, supplemented, as noted, by the 1916 edition, was prepared with such care and precision that it proved to be applicable with amazing completeness to the conditions of medical administration in the World War.

Hand in hand with the work on the various editions of the Manual for the Medical Department, modifications and changes were effected in the blank forms used in medical administration. Little need be said on this particular subject here except in regard to one most important form. Save for that one it may be dismissed with the statement that these changes finally produced results which proved of practical value when a great war came and that the enormous expansion which followed showed little need for modifications. In Civil War days, and long subsequently thereto, a great book was used for the register of all individual records of disease or injury. The report on the subject was at first numerical, and subsequently nominal, then being made on detached sheets of similar size to the pages of the register. Each register or report, as the case might be, of course, carried many different names on each page, which subsequently had to be carded in order to get together the sick record of officer or or man concerned. After the Civil War, with its enormous number of patients, a truly tremendous work had to be done in straightening out these records for pension purposes. Years were consumed in preparing the statistics for the Medical and Surgical History of the War of the Rebellion because of the need to extract the required information from numerical reports. In 1905 the Medical Department substituted individual cards for the old register and report of sick and wounded sheets.[88] No copying of sheets to cards was therefore required in the World War. This actually proved a saving of much time in compiling statistics as well as the saving of tens of thousands of dollars.

The thought underlying the recommendation of the Dodge Commission regarding the simplification of "paper work" is apparent, and doubtless a great deal of time which was badly needed for the performance of other duties more nearly connected with the sanitation of camps and the professional care of ill and injured was employed in preparing the various reports required of Spanish-American War medical officers. Yet rather voluminous records are regarded as essential to any great business; nor has the medical department of the army of any nation been able to escape the burdensome task of preparing them—our own, rather less than that of any other nation, on account of our liberal pension laws, which involve losses of millions of dollars if careless work is done here. Better forms, however, were adopted for this purpose, and simpler methods of accounting were put into vogue, as well as simplification in some other directions.

PROGRESS IN ORGANIZATION FOR WAR.

While perhaps the most important service performed by the Field Service Regulations, the Tables of Organization, and the newer editions of the Manual for the Medical Department was bringing real order out of just as real chaos, of course their successive editions recorded developments made from time to time in military practice.

These will be discussed here only in so far as the Medical Department is concerned. To do this it is necessary to recall the experience of the other nations which were then engaged in war, as given briefly in the accounts of the South African War and the Russo-Japanese War, for, as already indicated, the development in our Medical Department organization was partially based on their experience—very largely so in certain particulars.

Completion of Our Evacuation System.

As previously indicated, the chief detail in medical organization that was brought home to us by the South African and Russo-Japanese Wars affected the lines of communication and primarily the most advanced unit there, which was ultimately named in our service the evacuation hospital.

By us two evacuation hospitals, of 324 beds each, were provided for each division of about 18,000 officers and men.[89] It was planned to have them moved by rail, but the invention of the motor truck made it possible to move them across country, away from the railroad. An evacuation ambulance company was also provided to bridge the transport gap between field and evacuation hospitals at the railhead.[90] These units belonged to the line of communications.

By 1910 our evacuation system was complete in plan, from battalion aid station at the front to base hospital at the rear.[91] There was for the first time a complete relay of definite and permanent units (in theory and plans) so manned and equipped as successfully to handle the wounded man from the time when his injury was received until he could be placed in a permanent hospital in the area of distribution. Plans preceded organization, however, as further study of the text will show.

Actual Organization of Medical Field Units.

The idea that an army in time of peace, when there were no wounded to be rescued, should have organized and equipped ambulance companies and field hospitals was difficult of acceptance in our service in the early years of this century. While it was clearly apparent that companies of infantry and batteries of artillery should be trained in peace time, when there was no enemy to fight, no like necessity could be seen for medical units. Consequently, it took many years to get such units organized and trained in advance of war. The need for them was demonstrated in the maneuvers which took place from time to time, and it is interesting to see how, in the earlier ones, the medical service was represented by weak detachments, intended solely for the care of the cases of sickness that might develop in the command. Later, it began to be recognized that the Medical Department had its own tactical questions which had to be taken into consideration for the satisfactory solution of military problems, and additional medical personnel was allowed for use in making up provisional medical units to participate in the maneuvers. Finally, it became clear to everyone that units which were necessary as soon as troops took the field should have a permanent organization and place in the Military Establishment.

In the National Guard.—Subsequent to 1365, the first Medical Department field unit to be organized and mustered into service appears to have been a field hospital of the New York National Guard. A State law of 1905 authorized such a unit.[92] The record of the adjutant general's office, State of New York, shows that the first field hospital was mustered into service on March 14, 1906. It was attached to division headquarters at 56 West Sixty-sixth Street, New York City. The first ambulance company, authorized on December 10, 1910, was reorganized as a field hospital on November 29, 1911. The first permanent ambulance company was authorized November 29, 1911, and was organized at Binghamton on the same date. The first field hospital went into camp at Peekskill, N. Y., with equipment and transportation, during July and August, 1906. This was on field duty each year until 1916; then on the Mexican border; and in 1917 was drafted into Federal service for the World War. To the State of New York, then, belongs the credit for organizing the first modern field hospital unit in this country. It was not, therefore, in the Regular Army but in the National Guard that medical field units were first provided.

The organization of field medical units in the National Guard was much stimulated by the detail of a medical officer for duty with the Militia Division. This detail was obtained by the Surgeon General in July, 1910.[93] Records show the status of the sanitary units of the militia to have been as follows:

	1910[94]	1912[94]	1914[95]	1916[96] [e]	1917[97] [e]
Field hospitals	3	16	28	38	59
Ambulance companies	2	20	15	26	47
Sanitary detachments	125	118	156	174	267

[e] When called into Federal service for the war, Aug. 5, 1917.

Most of these, so far as organized by 1916, served on the Mexican border. Immediately thereafter discharges were generally taken so freely that many of these organizations became meager skeletons. With the beginning of the World War they were quickly recruited up to strength, often, to a considerable extent, from their old officers and men. While ready in a sense, when we entered the World War, very few of these organizations were ready for instant service, as were similar organizations of the Regular Army.

In the Regular Army.—In the year 1911 Hospital Corps companies (see Hospital Corps Companies of Instruction, infra), as such, disappeared, and the field hospitals and ambulance companies, so long planned, at last materialized.[98] The change was authorized by The Adjutant General on April 17, 1911. There had been up to this time four Hospital Corps companies of instruction, designated Company A, B, C, and D, respectively.[98] By the reorganization, effected in 1911, they became, first, Field Hospital and Ambulance Companies

Nos. 1, 2, 3, and 4, respectively, and subsequently, in the same year, Field Hospital Nos. 1, 2, 3, and 4, and Ambulance Companies Nos. 1, 2, 3, and 4.[99] The ambulance companies were formed from the respective parent organizations by a division of personnel, that portion remaining being designated a field hospital and continuing the records of the parent organization.

In 1914 Ambulance Companies Nos. 5, 6, 7, and 8 were organized, and Field Hospital Nos. 5, 6, and 7.[100] These were all in the United States. In 1916 Ambulance Company No. 9 was organized in the Hawaiian Islands.[101] These complete the lists of units organized before April 6, 1917, on which date there were six field hospitals and seven ambulance companies (Regular Army) in the United States proper. These 11 organizations had reasonably complete equipment and transportation. They formed the divisional evacuation service which was ready at once to take the field when war came and when the first important General Staff decision called for 40 combat divisions.

INSTRUCTION.

After the Spanish-American War it was well appreciated that both officers and men of the Medical Department should receive more thorough military instruction than was previously required. The Army Medical School at Washington continued to serve a useful purpose, it is true, but its course was intended primarily to supplement the professional knowledge of newly entered medical officers of the Regular Establishment in order to fit them for Army practice and to give them some idea of routine duties at posts.

It may also be well to point out here that by this time all the larger nations had established special schools for army medical officers. As a matter of fact, some of these schools had now been in operation for more than a century. The character of instruction varied considerably, but it is not necessary here to go into this further than to state that in all cases it was supposed to be of such a character and sufficient in amount to qualify the students as army medical officers. Usually, advanced as well as primary courses were conducted in these schools. Military as well as strictly medical duties were always taught, and as time went on the tendency was to give practical field instruction in one way or another. With countries which maintained a tactical organization with medical units in being as parts of divisions, instruction in the operation of these medical units was practically continuous. This, of course, was in addition to the instruction given at the schools. In some countries practical instruction was very largely given in divisions. Without going into the subject further, the point which it is desired to emphasize is that all important nations by this time realized the necessity for special instruction of army medical officers, and took steps to give it.

Hospital Corps companies of instruction.—Two Hospital Corps companies of instruction were established in 1861,[61] one at Fort Riley, Kans., and one at Fort D. A. Russell, Wyo. The object of the organization was twofold: To have at hand a trained body of sanitary soldiers, and to have a training school through which could be passed all enlisted men of the Hospital Corps. Necessity for economy in transportation limited the use of the companies largely to the training of enlisted men from civil life. In 1893, the company at Fort D. A. Russell was moved to Washington Barracks to make it available for the instruction of the class of medical officers at the newly created Army Medical School. In 1896 the company of instruction at Fort Riley was disbanded and its personnel distributed to selected posts throughout the West where instruction was continued in detachments.[102] During the Spanish-American War, systematic teaching in the company of instruction at Washington Barracks was practically suspended, but the company was used as a depot for detachments of men who were collected for service in the camps in the United States, the West Indies, and the Philippines.[103] A similar school was organized at Angel Island, Calif., where men destined for the Philippines were collected and given some instruction prior to leaving the United States.[104] In March, 1901, the company at Washington Barracks was reorganized, [105] later becoming Company of Instruction No. 1; and in 1902 a reorganization of the company at Angel Island was effected, when it became Company of Instruction No. 2.[106] These companies were the germs of both ambulance companies and field hospitals which have already been described. They had some equipment but no transportation. Drills and training were carried on with the hope that some day they would be completed and prepared to serve in the field.

An act of Congress of March, 1903,[107] provided that "the Secretary of War is authorized to organize companies of instruction, ambulance companies, field hospitals, and other detachments of the Hospital Corps, as the necessities of the service may require." This act gave authority for creating the units named in the 1904 Field Service Regulations, but the units were not created until 1911.[98] In 1904, Company of Instruction No. 2, at Fort McDowell, Angel Island, was converted into Company B, Hospital Corps; and the Company of Instruction at Washington Barracks was transformed into Company A, Hospital Corps.[108] These, however, were changed in little else than in name; the companies had hospital equipment but no ambulance transport.

In 1904 a pamphlet on the "Regulations and Program of Instruction in Hospital Corps Companies of Instruction, United States Army," was issued. This shows the company to have been essentially one of instruction. Instruction was given in handling both field hospitals and ambulance companies as well as regimental hospitals. Because of lack of both barracks and transportation, the original company and others were retained in the same form for years.

Companies A and B were ordered to Cuba in 1906, and a new company, C, was organized at Washington Barracks.[109] In 1907 and 1908 the two companies were returned from Cuba. This company organization of the field service continued until 1911, when the three hospital companies formed the total of our Army evacuation service in the United States for 100,000 men. Moreover, these companies had no transportation, and, except for its plans, accumulated supplies, and the general training of its officers and men, the Medical Department, so far as field organizations were concerned, was little better prepared for war than it was in 1898 or in 1861.

Medical camps of instruction.—In 1909 Surgeon General Torney obtained permission from the War Department to establish medical camps of instruction at Antietam, Md., at Sparta, Wis., and at San Francisco, Calif., at each of which courses of instruction were given to medical officers of the Organized Militia (National Guard).[110] Regular medical officers, as well as organized companies of the Hospital Corps, were ordered to these camps. Both of these participated as practical instructors. These camps served a useful purpose in stimulating interest as well as by demonstrating how sanitary units should be conducted. They were prototypes of the "Plattsburg idea," originated at the citizens' training camp, Plattsburg, N. Y., 1915, but they suffered the usual fate of ideas which are ahead of their time. Their value was not sufficiently appreciated by the War Department to secure funds for their continuance in future years.

The purpose of these camps, of course, was to give instruction in the internal administration of Medical Department field units and in the details of field sanitation. They were not intended to teach the duties of the Medical Department as part of an army in campaign, though they furnished a most valuable preliminary course therefor by giving primary instruction which would enable the Medical Department to participate to better effect in general maneuvers.

Field service school for medical officers.—A definite step forward was the establishment (at Fort Leavenworth, Kans.) of a correspondence school for medical officers. This school was planned and instituted in 1910.[111] Prior to this a series of lectures to line officers had been delivered, by a specially detailed medical officer, as part of the course at the Army Service Schools.[112] A ruling was secured from the service schools to the effect that no solution of a tactical problem would be considered complete without plans for handling the wounded. This was an important step and gave the whole subject new consequence. The Leavenworth problems and solutions were distributed and became widely known. In 1910 a series of problems and solutions was published under the title, "A Study in Troop Leading and Management of the Sanitary Service in War." [113] In 1911 "The Principles of Sanitary Tactics" was also published.[114] Both these volumes were widely used throughout the service and also in the British Army.

The Army Field Service School for Medical Officers was established at Fort Leavenworth in the summer of 1910,[115] with 12 students; a correspondence course was given to 30 additional medical officers. This was an entirely original institution, not modeled after any other school at home or abroad. It has been continued in peace times and is still doing excellent work.

Maneuvers.—Through lack of any primary school of instruction except the Hospital Corps companies, which provided for the teaching of only a very limited number of medical officers in a limited way, general maneuvers for a long time constituted the only course of military instruction for medical officers generally. This plan was not unlike attempting to give a college course to students who had not been through a high school; nevertheless it was far better than no military instruction at all.

Col. J. Van Rensselaer Hoff, M. C., in his report as chief surgeon of the provisional division assembled at Fort Riley, Kans., in October, 1903, for maneuver purposes, made the following retrospective statement with regard to the progress of the Medical Department at early maneuvers: [116]

> It may be interesting to glance at the development of the Medical Department at maneuvers, beginning with the first in this region, when in 1888 the Fifth Cavalry assembled near Guthrie, Okla., followed the next year by much more extensive operations at Chilocco under General Merritt; then the maneuvers of 1902, and finally those of 1903, at all of which the undersigned acted as chief surgeon.

> In 1888–89 one looked in vain for any regulation prescribing the medical equipment and personnel for any command beyond the mere allowance of medicines * * *. What we had at both these maneuvers was absolutely improvised. The contingency was met, but had it not been no one on the ground could properly have been blamed.
>
> An excellent regimental medical field equipment was devised in 1891 and used until the beginning of the Spanish-American War, when another was substituted, which in turn gave place to that of 1900 and 1901, but even yet the field hospital, as such, was without form and void.
>
> The regulations of 1902 (Manual for the Medical Department) set forth for the first time a detailed statement of the complete equipment of the field hospital and ambulance company, showing exactly the material to be supplied by each department. This was done advisely, so that there could be no misunderstanding on the part of anyone as to exactly what these organizations consisted of, what was to be supplied by the Quartermaster's Department as well as the Medical Department, what the possibilities of the organizations should be, and how they were to be conducted.

The new field hospital equipment referred to was tried out at the 1903 maneuvers, and a beginning was made in forming provisional units out of casual personnel. In the maneuvers at Manassas in 1904, in which the National Guard of most of the Eastern States cooperated with the Army, provisional ambulance companies, field hospitals, and base hospitals were assembled and took part in the program. Thereafter this was almost the universal practice at maneuvers. In 1908, companies of instruction were ordered to maneuver camps,[117] where they were temporarily divided into field hospitals and ambulance companies, and this continued to be the practice thereafter until the companies were replaced by permanent field hospitals and ambulance companies. The medical units which participated at first were of necessity wholly provisional, for permanent units did not exist. Later, with the organization of permanent units, both Regular Army and National Guard, it was no longer necessary to organize them in each case on the maneuver ground.

At the maneuvers at American Lake, Wash., in 1910,[118] field problems were for the first time worked out for the Medical Department. In 1912 sanitary units took part in the maneuvers at Fort Benjamin Harrison and in Connecticut.[119]

Mobilizations.—In 1911 a division of troops, the first mobilized since 1898, was assembled at San Antonio, Tex.,[120] ostensibly for purposes of training, but really on account of disturbed conditions in Mexico. For this division a complete sanitary train of four field hospitals and ambulance companies was organized and functioned. This was the first complete sanitary train since Civil War days. The instruction was evidently good, for the discipline, military appearance, and efficiency of the medical units excited much favorable comment. The necessity of these units as an integral part of the divisional organization was becoming recognized by this time, and the next step was an increase of the number of permanent organizations from two ambulance companies and two field hospitals to four each.[99] This camp at San Antonio was a noteworthy one from the Medical Department standpoint, not only for the completeness of its medical organization, but because it set a new standard in camp sanitation, as will be seen later. It was still in existence in 1912 and the sanitary units took part in its maneuvers of that year.

Again, in 1913, a division was assembled in Texas and spent the spring and summer in camp at Texas City,[121] one of its brigades having gone on to Vera Cruz and occupied that city.[122] This expeditionary brigade was accompanied by a field hospital but no ambulance company; an ambulance company was improvised from regimental ambulances taken along.[122] These mobilizations clearly demonstrated the numerical deficiency of the Hospital Corps when it came to supplying sanitary trains for mobilized divisions, and brought forth the following straightforward statement from Surgeon General Torney in his annual report for 1913:

> I can not, in transmitting this my last annual report, fail to call your attention to one particular in which the Medical Department is unprepared to fulfill its responsibilities to the Army and the Nation. It is one which has been the subject of frequent communications from this office in the last few years and has been pointed out for several years in the annual reports—that is, the great deficiency in number of the Hospital Corps; so that when the tactical divisions of the Regular Army take the field they can have not more than one-fourth of the sanitary units required for the medical service and called for by the Field Service Regulations. In fact, the first division stationed in the Eastern Department has not a single sanitary unit. This matter is discussed quite fully on page 165 et seq. of this report. No action by Congress is necessary to remedy this defect, since Congress, in order that such a deficiency might be avoided, has placed in the hands of the President the responsibility for providing a sufficiently numerous Hospital Corps to care for the sick and wounded, and has specifically stated that they shall not be counted as a part of the strength of the Army. It is believed that Congress has thus shown the intention that our Army shall have an adequate medical service proportioned to its strength, and this is what I have repeatedly urged. It is also believed that if the Secretary would recommend to Congress the reorganization of the Hospital Corps, which is asked for in this report, it will be easily obtained and will much facilitate the recruitment of suitable men for this relatively unattractive service.

The next year, 1914, saw no improvement in the Mexican situation, and preparations were made for the mobilization of a field army, in view of which a few additional medical units were authorized, including two evacuation hospitals and two field supply depots. The year 1915, for the Army, was one of watchful waiting, as the phrase then was, but the mental attitude was rather one of weary waiting in the lonely camps on the southern border.

The year 1916 was much more eventful, beginning with Villa's unprovoked night attack on our troops at Columbus, N. Mex. This was followed by the punitive expedition of about 12,000[123] men of all arms, which remained in Mexico nearly a year. The killing or capture of a detachment of our men by Mexican troops resulted in the dispatch of practically the entire Regular Army and National Guard to the Mexican border,[123] where they remained on field duty from July to the end of the year.

The expedition into Mexico was accompanied by two ambulance companies (motorized) and two field hospitals (one motorized). The field hospitals served as camp hospitals, while the ambulance companies carried on the evacuation service.[124] It was at this time that the value of motor ambulances was first clearly demonstrated in our service.

A complete sanitary train was also organized at San Antonio,[125] Tex., where special schools were conducted for officers and men, constituting a more extensive course of training with troops than had ever been practical before.

The war cloud which had burst over Europe two years before was beginning to cast its shadow over America, and although measures of preparedness were not officially encouraged, the attention of the people was drawn in this direction by the current of events and by the advocacy of farseeing men. This mobilization of the armed forces of the Nation was most fortunate and opportune, therefore, as a training maneuver alike in military and sanitary matters.

One result was a large increase in the number of sanitary units both of the Regular Army and the National Guard.

Furthermore, nothing could have been more fortunate for the medical supply service from every standpoint. Not only was the experience of itself of value in obtaining and issuing supplies, but certain supplies were ready at hand when the World War came, which would not likely have been the case if the Army had not been mobilized immediately prior thereto.

PROFESSIONAL PROGRESS IN MEDICINE AND SURGERY.

Throughout the history of armies army medical and surgical practice, generally speaking, has been on a par with civilian practice of the same epoch. The development of specialization in American medicine since the Spanish-American War has had a most important effect on Medical Department organization, for even as late as that war it was assured that any doctor, with a little military instruction, would be able to fill almost any place in the Army medical establishment. On the other hand, possibly specialization has been carried too far of late years; no good purpose would be served by entering here into a controversy on this subject. The fact remains that, as has just been stated, such general specialization as obtained among the civil medical profession greatly complicated the fitting of erstwhile practitioners into positions where their knowledge could be made of most value. It is also the fact that since the Spanish-American War great advances have been made in the practice of medicine, surgery, and the specialties. This resulted, by the time the World War came on, in greatly enhanced possibilities of contributing to the military strength of the Army through efficient professional practice. Thousands of patients could now be restored to military usefulness who even as late as the Spanish-American War would have been physically incapacitated for the whole course of the war.

ADVANCES IN FIELD SANITATION.

The lamentable sanitary conditions and the great amount of sickness which prevailed in the Spanish-American War made a profound impression upon the Army and upon the country at large, and the causes and practicable methods of prevention of diseases in campaign were subjects of diligent study by the Medical Department during the succeeding years. Methods for the disposal of garbage and excreta, for the purification of water, for the prevention of the breeding of flies and mosquitoes, and all the other details for the prevention of intestinal and insect-borne diseases that might prevail, were studied, tried out, and if not found practically efficient were rejected. For the camp latrines the sanitary trough devised by Walter Reed was first adopted, and later abandoned because of practical difficulties in the way of operation.[f] It was succeeded by the McCall incinerator, but this was costly and lacked portability. Finally, where sewers could not be had, the old pit system was restored but with its objectionable features removed by the Havard box and a daily burning out with oil. In the same way the ingenious Forbes sterilizer for drinking water was replaced by chlorination, and finally with the Lyster bag as the field method of application of chlorination. By 1917 the methods of fly and mosquito prevention had reached a high degree of efficiency. Another no less important step forward in the prevention of intestinal diseases was taken by the issue of general instructions that the hands be washed after a visit to the latrine and before meals.[126] Unfortunately, it was found difficult to enforce this order under field conditions.

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[f] One of the most serious was that in wet weather, where there were not paved roads, the weight of the excavator made it almost impossible to haul.

The camp of the maneuver division at San Antonio in the summer of 1911 reached a degree of sanitary perfection which had rarely, if ever, been equaled in our Army. This command of over 10,000 men lived under canvas for more than four months, with better general conditions of health than in the regiments which remained in barracks at their posts. Only two cases of typhoid fever developed there.[127] However, such remarkable and, at that time, unprecedented immunity from this former plague of camps is to be explained by a fact which makes this camp notable in the annals of preventive medicine. Here, for the first time, compulsory universal immunization of a large body of men against typhoid fever was tried out by the practical and efficient method with which the name of Russell will be always associated. This triumphant demonstration caused the prompt adoption of typhoid immunization as a prescribed routine procedure in our Army[128] and its acceptance by the French two years later. Without this beneficent preventive measure there is good reason to believe that typhoid incidence would have been very much higher in the World War than it actually was. Such an incidence as that of the Spanish-American War would have given us, for each million of men, 140,000 cases and 14,000 deaths. Instead of these terrible figures, we had, in our great armies in France and America, during the years 1918 and 1919, a total of 1,897 cases with 227 deaths.[129] While the lesser amount of typhoid throughout the United States in 1917, as compared with 1898, doubtless had its influence, this should not be held to minimize the importance of this magnificent sanitary achievement. Paratyphoid was also found subject to this method of control during the Mexican border mobilization in 1916. As a result a triple vaccine was made available to troops and its universal use was enforced.[130]

That equally favorable results were not secured in the World War for sputum-borne diseases as for intestinal and insect-borne diseases is not due to lack of recognition beforehand of the importance of the former. The border mobilization of 1916 was attended by a high incidence of pneumonia, with many deaths;[131] and on our entry into the World War prophets were not lacking in the Medical Corps of the Army who announced that pneumonia would prove to be the scourge of our troops in that war. This being the case, preparations to combat pneumonia were made, based on the scientific knowledge of the time, reinforced by what was supposed to have been learned during the border mobilization. Possibly the results would have been far worse without the sanitary measures which were taken. On the other hand, it is possible that in the years to come our efforts, due to lack of exact scientific knowledge, will go down into the limbo of hit-or-miss sanitation.

Before the World War much progress had been made in the prevention of venereal diseases, which, while not fatal to the personnel of armies like the diseases which have just been discussed, are likely to prove no less, if not more, fatal to military efficiency. Our methods, in brief, contemplated the compulsory use of a prophylactic, with punishment for failure to take the same, and loss of pay for disability due to misconduct.[132] Prior to the World War little or no control could be exercised over civilian sources of infection at home, but something had been done in this direction at various places occupied by our troops abroad. At all events, the importance of this form of control was well appreciated by the Medical Corps.

Any account of advances made in military sanitation in our Army during the period between the Spanish-American War and the World War would be very incomplete if no reference were made to the development of the sanitary conscience of the Army in the meantime. With the American public as a whole, from which, of course, our World War Army came—and this also doubtless proved of considerable assistance in protecting the health of troops—the same process had been going on. It is not too much to say that in the great advances made in scientific sanitation between 1898 and 1917 the Army of the United States had been garrisoned in small and isolated posts where there was not much sickness. When the Spanish-American War began, while the Army as a whole did not regard sanitation as a medical fad, as has sometimes been asserted, yet the rank and file in no sense appreciated the danger incident to large camps with personnel hastily raised from all parts of the country. Nor did they realize the risks of service in a tropical climate, where it was inevitable that much disease would be introduced, or of service in places where sources of infection would be much multiplied while at the same time sanitary conveniences were lacking. The awakening was rude but thoroughly effective, and since then the subject of sanitation has been one of acute practical interest to the Army. Typhoid in the camps of the United States, and malaria and yellow fever in Cuba, proved far more deadly than the bullets of the enemy in the Spanish-American War. Then came some epoch-making sanitary work by medical officers of the Army in every new territory opened up to the United States by that war. It could not but be apparent, therefore, to the Army as a whole that the possibilities in the prevention of disease were very great. Between the Spanish-American War and the World War the Army served very generally in tropical countries or in camps where disregard of sanitary laws was likely to be followed by condign punishment. Still further, before we entered the World War the experience of the earlier combatants in preventing disease, and the great importance this had assumed from the standpoint of military efficiency, was well known throughout our Army by April 6, 1917. All in all, then, it is very possible that no army had its sanitary conscience so well developed as our own when we entered the World War. Certainly no American Army ever before realized to nearly an equal extent that its good health was very largely in its own hands. Nor was its attitude a passive one; on the contrary, it was most active, and no trouble was too great to take if it promised to be repaid by keeping troops free from disease.

WORLD WAR PERIOD PRECEDING ENTRY OF UNITED STATES.

As the subjects which would naturally fall under this heading, being so intimately and nearly concerned therewith, are largely a part of the story of our actual participation in the World War, and will therefore be discussed at length in the various volumes of this history, it is deemed unnecessary to go into them so fully here as would otherwise be desirable. Yet, our early arrangements, as a matter of fact, were influenced to a considerable extent by what we had learned before we entered the war, from the experience of our future allies and enemies. So it is believed that while details should be left to the body of the history, certain lessons learned from that experience may appropriately be summed up here. The reorganization of our own Army by the national defense act of 1916 is also pertinent to the present subject, and will be considered first, as it was very important and represents a concrete accomplishment. Moreover, during the war, Medical Department as well as Army organization as a whole was based primarily on the organization of 1916. As little as it made for preparation in the light of subsequent events, it went further in the way of legislation for a war army than any previous act of Congress passed in peace times. This, probably everyone will grant now, was due solely to the World War, which, when the act in question was passed, was drawing measurably near to us.

National Defense Act.

The act of Congress in question, commonly known as the national defense act, is very long and should really be read in its entirety. Lack of space prevents quoting other than extracts closely relating to the Medical Department.

ACT REORGANIZING ARMY, 1916.

Bulletin }
No. 16. }

WAR DEPARTMENT,
Washington, *June 22, 1916.*

The following act of Congress is published to the Army for the information and guidance of all concerned:

AN ACT For making further and more effectual provision for the national defense, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Army of the United States shall consist of the Regular Army, the Volunteer Army, the Officers' Reserve Corps, the Enlisted Reserve Corps, the National Guard while in the service of the United States, and such other land forces as are now or may hereafter be authorized by law.

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Provided further, That the total enlisted force of the line of the Regular Army, excluding the Philippine Scouts and the enlisted men of the Quartermaster Corps, of the Medical Department, and of the Signal Corps, and the unassigned recruits, shall not at any one time, except in the event of actual or threatened war or similar emergency in which the public safety demands it, exceed one hundred and seventy-five thousand men: *Provided further*, That the unassigned recruits at depots or elsewhere shall at no time, except in time of war, exceed by more than seven per centum the total authorized enlisted strength.

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Sec. 3. *Composition of brigades, divisions, and so forth.*— * * * The typical Infantry division shall consist of * * * and one sanitary train. The typical Cavalry division shall consist of * * * and one sanitary train. The typical Army corps shall consist of * * * and such sanitary trains as the President may deem necessary. * * * Each sanitary train shall consist of such officers and enlisted men and shall be organized as the President may prescribe. Nothing herein contained, however, shall prevent the President from increasing or decreasing the number of organizations prescribed for the typical brigades, divisions, and Army corps, or from prescribing new and different organizations and personnel as the efficiency of the service may require.

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SEC. 10. *The Medical Department.*—The Medical Department shall consist of one Surgeon General, with the rank of major general during the active service of the present incumbent of that office, and thereafter with the rank of brigadier general,* who shall be chief of said department, a Medical Corps, a Medical Reserve Corps within the limit of time fixed by this act, a Dental Corps, a Veterinary Corps, an enlisted force, the Nurse Corps, and contract surgeons as now authorized by law, the commissioned officers of which shall be citizens of the United States.

The Medical Corps shall consist of commissioned officers below the grade of brigadier general, proportionately distributed among the several grades as in the Medical Corps now established by law. The total number of such officers shall approximately be equal to, but not exceed, except as hereinafter provided, seven for every one thousand of the total enlisted strength of the Regular Army authorized from time to time by law: *Provided*, That if by reason of a reduction by law in the authorized enlisted strength of the Army aforesaid the total number of officers in the Medical Corps commissioned previously to such reduction shall for the time being exceed the equivalent of seven to one thousand of such reduced enlisted strength no original appointment to commissioned rank in said corps shall be made until the total number of commissioned officers thereof shall have been reduced below the equivalent of seven to the thousand of the said reduced enlisted strength, nor thereafter so as to make the total number of commissioned officers thereof in excess of the equivalent of seven to the thousand of said reduced enlisted strength, and no promotion shall be made above the grade of captain in said corps until the number of officers in the grade above that of captain to which the promotion is due shall have been reduced below the proportional number authorized for such grade on the basis of the reduced enlisted strength, nor thereafter so as to make the number of officers in such grade in excess of the proportional number authorized on the basis of said reduced enlisted strength: *Provided further*, That when in time of war the Regular Army shall have been increased by virtue of the provisions of this or any other act, the medical officers appointed to meet such increase shall be honorably discharged from the service of the United States when the reduction of the enlisted strength of the Army shall take place. *Provided further*, That persons hereafter commissioned in the Medical Corps shall be citizens of the United States between the ages of twenty-two and thirty years and shall be promoted to the grade of captain upon the completion of five years' service in the Medical Corps and upon passing the examinations prescribed by the President for promotion to the grade of captain in the Medical Corps: *Provided, further*, That relative rank among captains in the Medical Corps, who have or shall have attained that rank by operation of law after a period of service fixed thereby, shall be determined by counting all the service rendered by them as officers in said corps and as assistant surgeons in the Regular Army, subject, however, to loss of files by reason of sentence of court-martial or by reason of failure to pass examination for promotion: *Provided further*, That hereafter the President shall be authorized to detail not to exceed five officers of the Medical Department of the Army for duty with the military relief division of the American National Red Cross.

The enlisted force of the Medical Department shall consist of the following personnel, who shall not be included in the effective strength of the Army nor counted as a part of the enlisted force provided by law: Master hospital sergeant, hospital sergeants, sergeants (first class), sergeants, corporals, cooks, horseshoers, saddlers, farriers, mechanics, privates (first class), and privates: *Provided*, That master hospital sergeants shall be appointed by the Secretary of War, but no person shall be appointed master hospital sergeant until he shall have passed a satisfactory examination under such regulations as the Sectetary of War may prescribe before a board of one or more medical officers as to his qualifications for the position, including knowledge of pharmacy, and demonstrated his fitness therefor by service of not less than twelve months as hospital sergeant, or sergeant, first class, Medical Department, or as sergeant, first class, in the Hospital Corps now established by law; and no person shall be designated for such examination except by written authority of the Surgeon General: *Provided further*, That original enlistments for the Medical Department shall be made in the grade of private, and reenlistments and promotions of enlisted men therein, except as hereinbefore prescribed, and transfers thereto from the enlisted force of the line or other staff departments and corps of the Army shall be governed by such regulations as the Secretary of War may prescribe: *Provided further*, That the enlisted men of the Hospital Corps who are in active service at the time of the approval of this act are hereby transferred to the corresponding grades of the Medical Department, established by this act: *Provided further*, That the total number of enlisted men in the Medical Department shall be approximately equal to, but not exceed, except as hereinafter provided, the equivalent of five per centum of the total enlisted strength of the Army authorized from time to time by law: *Provided further*, That in time of actual or threatened hostilities, the Secretary of War is hereby authorized to enlist or cause to be enlisted in the Medical Department such additional number of men as the service may require: *Provided further*, That the number of enlisted men in each of the several grades designated below shall not exceed, except as hereinafter provided, the following percentages of the total authorized enlisted strength of the Medical Department, to wit: Master hospital sergeants, one-half of one per centum; hospital sergeants, one-half of one per centum; sergeants, first class, seven per centum; sergeants, eleven per centum; corporals, five per centum; and cooks, six per centum: *Provided further*, That the number of horseshoers, saddlers, farriers, and mechanics in the Medical Department shall not exceed one each to each authorized ambulance company or like organization: *Provided further*, That in said department the number of privates, first-class, shall not exceed twenty-five per centum of the number of privates: *Provided further*, That if by reason of a reduction by operation of law in the authorized enlisted strength of the Army aforesaid the number of noncommissioned officers of any grade in the Medical Department whose warrants were issued previously to such reduction shall for the time being exceed the percentage hereinabove specified for such grade, no promotion to such grade shall be made until the percentage of noncommissioned officers therein shall have been reduced below that authorized for such grade on the basis of the said reduced enlisted strength, nor thereafter so as to make the percentage of noncommissioned officers therein in excess of the percentage authorized on the basis of the said reduced enlisted strength; but noncommissioned officers may be reenlisted in the grades held by them previously to such reduction regardless of the percentages aforesaid; and when under this provision the number of noncommissioned officers of any grade exceeds the percentage specified any noncommissioned officer thereof, not under charges, may be discharged on his own application. *Provided further*, That privates, first class, of the Medical Department shall be eligible for ratings for additional pay as follows: As dispensary assistant, $2 a month; as nurse, $3 a month; as surgical assistant, $5 a month: *Provided further*, That no enlisted man shall receive more than one rating for additional pay under the provisions of this section, nor shall any enlisted man receive any additional pay under such rating unless he shall have actually performed the duties for which he shall be rated.

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* This law was changed at a later date. See p. 123.

The President is hereby authorized to appoint and commission, by and with the advice and consent of the Senate, dental surgeons, who are citizens of the United States between the ages of twenty-one and twenty-seven years, at the rate of one for each one thousand enlisted men of the line of the Army. Dental surgeons shall have the rank, pay, and allowances of first lieutenants until they have completed eight years' service. Dental surgeons of more than eight but less than twenty-four years' service shall, subject to such examination as the President may prescribe, have the rank, pay, and allowances of captains. Dental surgeons of more than twenty-four years' service shall, subject to such examination as the President may prescribe, have the rank, pay, and allowances of major: *Provided*, That the total number of dental surgeons with rank, pay, and allowances of major shall not at any time exceed fifteen: *And provided further*, That all laws relating to the examination of officers of the Medical Corps for promotion shall be applicable to dental surgeons.

Authority is hereby given to the Secretary of War to grant permission, by revocable license, to the American National Red Cross to erect and maintain on any military reservations within the jurisdiction of the United States buildings suitable for the storage of supplies, or to occupy for that purpose buildings erected by the United States, under such regulations as the Secretary of War may prescribe, such supplies to be available for the aid of the civilian population in case of serious national disaster.

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SEC. 16. *Veterinarians.*—The President is hereby authorized, by and with the advice and consent of the Senate, to appoint veterinarians and assistant veterinarians in the Army, not to exceed, including veterinarians now in service, two such officers for each regiment of Cavalry, one for every three batteries of Field Artillery, one for each mounted battalion of Engineers, seventeen as inspectors of horses and mules and as veterinarians in the Quartermaster Corps, and seven as inspectors of meats for the Quartermaster Corps; and said veterinarians and assistant veterinarians shall be citizens of the United States and shall constitute the Veterinary Corps and shall be a part of the Medical Department of the Army.

Hereafter a candidate for appointment as assistant veterinarian must be a citizen of the United States, between the ages of twenty-one and twenty-seven years, a graduate of a recognized veterinary college or university, and shall not be appointed until he shall have passed a satisfactory examination as to character, physical condition, general education, and professional qualifications.

An assistant veterinarian appointed under this act shall, for the first five years of service as such, have the rank, pay, and allowances of second lieutenant; that after five years of service he shall have the rank, pay, and allowances of first lieutenant; that after fifteen years of service he shall be promoted to be a veterinarian with the rank, pay, and allowances of captain; and that after twenty years' service he shall have the rank, pay, and allowances of a major: *Provided*, That any assistant veterinarian, in order to be promoted as hereinbefore provided, must first pass a satisfactory examination, under such rules as the President may prescribe, as to professional qualifications and adaptability for the military service; and if such assistant veterinarian shall be found deficient at such examination he shall be discharged from the Army with one year's pay.

The veterinarians of Cavalry and Field Artillery now in the Army, together with such veterinarians of the Quartermaster Corps as are now employed in said corps, who at the date of the approval of this act shall have had less than five years' governmental service, may be appointed in the Veterinary Corps as assistant veterinarians with the rank, pay, and allowances of second lieutenant; those who shall have had over five years of such service may be appointed in said corps as assistant veterinarians with the rank, pay, and allowances of first lieutenant; and those who shall have had over fifteen years such service may be appointed in said corps as veterinarians with the rank, pay, and allowances of captain: *Provided*, That no such appointment of any veterinarian shall be made unless he shall first pass satisfactorily a practical professional and physical examination as to his fitness for the military service: *Provided further*, That veterinarians now in the Army or in the employ of the Quartermaster Corps who shall fail to pass the prescribed physical examination because of disability incident to the service and sufficient to prevent them from the performance of duty valuable to the Government shall be placed upon the retired list of the Army with seventy-five per centum of the pay to which they would have been entitled if appointed in the Veterinary Corps as hereinbefore prescribed.

The Secretary of War, upon recommendation of the Surgeon General of the Army, may appoint in the Veterinary Corps, for such time as their services may be required, such number of reserve veterinarians as may be necessary to attend public animals pertaining to the Quartermaster Corps. Reserve veterinarians so employed shall have the pay and allowances of second lieutenant during such employment and no longer: *Provided*, That such reserve veterinarians shall be graduates of a recognized veterinary college or university and shall pass a satisfactory examination as to character, physical condition, general education, and professional qualifications in like manner as hereinbefore required of assistant veterinarians; such reserve veterinarians shall constitute a list of eligibles for appointment as assistant veterinarians, subject to all the conditions hereinbefore prescribed for the appointment of assistant veterinarians.

Within a limit of time to be fixed by the Secretary of War, candidates for appointment as assistant veterinarians who shall have passed satisfactorily the examinations prescribed for that grade by this act shall be appointed, in the order of merit in which they shall have passed such examination, to vacancies as they occur, such appointments to be for a probationary period of two years, after which time, if the services of the probationers shall have been satisfactory, they shall be permanently appointed with rank to date from the dates of rank of their probationary appointments. Probationary veterinarians whose services are found unsatisfactory shall be discharged at any time during the probationary period, or at the end thereof, and shall have no further claims against the Government on account of their probationary service.

The Secretary of War shall from time to time appoint boards of examiners to conduct the veterinary examinations hereinbefore prescribed, each of said boards to consist of three medical officers and two veterinarians.

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SEC. 30. *Composition of the Regular Army Reserve.*—The Regular Army Reserve shall consist of, first, all enlisted men now in the Army Reserve or who shall hereafter become members of the Army Reserve under the provisions of existing law; second, all enlisted men furloughed to or enlisted in the Regular Army Reserve under the provisions of this act; and, third, any person holding an honorable discharge from the Regular Army with character reported at least good who is physically qualified for the duties of a soldier and not over forty-five years of age who enlists in the Regular Army Reserve for a period of four years.

SEC. 37. *The Officers' Reserve Corps.*—For the purpose of securing a reserve of officers available for service as temporary officers in the Regular Army, as provided for in this act and in section eight of the act approved April twenty-fifth, nineteen hundred and fourteen, as officers of the Quartermaster Corps and other staff corps and departments, as officers for recruit rendezvous and depots, and as officers of volunteers, there shall be organized, under such rules and regulations as the President may prescribe not inconsistent with the provisions of this act, an Officers' Reserve Corps of the Regular Army. Said corps shall consist of sections corresponding to the various arms, staff corps, and departments of the Regular Army. Except as otherwise herein provided, a member of the Officers' Reserve Corps shall not be subject to call for service in time of peace, and whenever called upon for service shall not, without his consent, be so called in a lower grade than that held by him in said reserve corps.

The President alone shall be authorized to appoint and commission as reserve officers in the various sections of the Officers' Reserve Corps, in all grades up to and including that of major, such citizens as, upon examination prescribed by the President, shall be found physically, mentally, and morally qualified to hold such commissions: *Provided*, That the proportion of officers in any section of the Officers' Reserve Corps shall not exceed the proportion for the same grade in the corresponding arm, corps, or department of the Regular Army, except that the number commissioned in the lowest authorized grade in any section of the Officers' Reserve Corps shall not be limited.

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One year after the passage of this act the Medical Reserve Corps, as now constituted by law, shall cease to exist. Members thereof may be commissioned in the Officers' Reserve Corps, subject to the provisions of this act, or may be honorably discharged from the service.

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SEC. 38. *The Officers' Reserve Corps in war.*—In time of actual or threatened hostilities the President may order officers of the Officers' Reserve Corps, subject to such subsequent physical examinations as he may prescribe, to temporary duty with the Regular Army in grades thereof which cannot, for the time being, be filled by promotion, or as officers in volunteer or other organizations that may be authorized by law, or as officers at recruit rendezvous and depots, or on such other duty as the President may prescribe. While such reserve officers are on such service they shall, by virtue of their commissions as reserve officers, exercise command appropriate to their grade and rank in the organizations to which they may be assigned, and shall be entitled to the pay and allowances of the corresponding grades in the Regular Army, with increase of pay for length of active service, as allowed by law for officers of the Regular Army, from the date upon which they shall be required by the terms of their orders to obey the same.

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SEC. 60. *Organization of National Guard units.*—Except as otherwise specifically provided herein, the organization of the National Guard, including the composition of all units thereof, shall be the same as that which is or may hereafter be prescribed for the Regular Army, subject in time of peace to such general exceptions as may be authorized by the Secretary of War. And the President may prescribe the particular unit or units, as to branch or arm of service, to be maintained in each State, Territory, or the District of Columbia in order to secure a force which, when combined, shall form complete higher tactical units.

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SEC. 78. *The National Guard Reserve.*—Subject to such rules and regulations as the President may prescribe, a National Guard Reserve shall be organized in each State, Territory, and the District of Columbia, and shall consist of such organizations, officers, and enlisted men as the President may prescribe, or members thereof may be assigned as reserve to an active organization of the National Guard.

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SEC. 111. *National Guard when drafted into Federal service.*—When Congress shall have authorized the use of the armed land forces of the United States, for any purpose requiring the use of troops in excess of those of the Regular Army, the President may, under such regulations, including such physical examination as he may prescribe, draft into the military service of the United States, to serve therein for the period of the war unless sooner discharged, any or all members of the National Guard and of the National Guard Reserve.

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Sec. 115. *Physical examination.*—Every officer and enlisted man of the National Guard who shall be called into the service of the United States as such shall be examined as to his physical fitness under such regulations as the President may prescribe without further commission or enlistment: *Provided*, That immediately preceding the muster out of an officer or enlisted man called into the active service of the United States he shall be physically examined under rules prescribed by the President of the United States, and the record thereof shall be filed and kept in the War Department.

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Sec. 120. *Purchase, or procurement of military supplies in time of actual or imminent war.*—The President, in time of war or when war is imminent, is empowered, through the head of any department of the Government, in addition to the present authorized methods of purchase or procurement, to place an order with any individual, firm, association, company, corporation, or organized manufacturing industry for such product or material as may be required, and which is of the nature and kind usually produced or capable of being produced by such individual, firm, company, association, corporation, or organized manufacturing industry.

Compliance with all such orders for products or material shall be obligatory on any individual, firm, association, company, corporation, or organized manufacturing industry or the responsible head or heads thereof and shall take precedence over all other orders and contracts theretofore placed with such individual, firm, company, association, corporation, or organized manufacturing industry, and any individual, firm, association, company, corporation, or organized manufacturing industry or the responsible head or heads thereof owning or operating any plant equipped for the manufacture of arms or ammunition, or parts of ammunition, or any necessary supplies or equipment for the Army, and any individual, firm, association, company, corporation, or organized manufacturing industry or the responsible head or heads thereof owning or operating any manufacturing plant, which, in the opinion of the Secretary of War, shall be capable of being readily transformed into a plant for the manufacture of arms or ammunition, or parts thereof, or other necessary supplies or equipment, who shall refuse to give to the United States such preference in the matter of the execution of orders, or who shall refuse to manufacture the kind, quantity, or quality of arms or ammunition, or the parts thereof, or any necessary supplies or equipment, as ordered by the Secretary of War, or who shall refuse to furnish such arms, ammunitions, or parts of ammunition, or other supplies or equipment at a reasonable price as determined by the Secretary of War, then, and in either such case, the President, through the head of any department of the Government, in addition to the present authorized methods of purchase or procurement herein provided for, is hereby authorized to take immediate possession of any such plant or plants, and through the Ordnance Department of the United States Army, to manufacture therein in time of war, or when war shall be imminent, such product or material as may be required, and any individual, firm, company, association, or corporation, or organized manufacturing industry, or the responsible head or heads thereof, failing to comply with the provisions of this section shall be deemed guilty of a felony, and upon conviction shall be punished by imprisonment for not more than three years and by a fine not exceeding $50,000.

The compensation to be paid to any individual, firm, company, association, corporation, or organized manufacturing industry for its products or material, or as rental for use of any manufacturing plant while used by the United States, shall be fair and just.

The President is hereby authorized, in his discretion, to appoint a Board on Mobilization of Industries Essential for Military Preparedness, nonpartisan in character, and to take all necessary steps to provide for such clerical assistance as he may deem necessary to organize and coordinate the work hereinbefore described.

* * * * * * *

Medical Preparedness.

On April 14, 1916, probably prompted by pending legislation on national preparedness, a group of eminent surgeons met in the Union League Club in Chicago and organized a Committee on Medical Preparedness. At this meeting it was voted to place before the President of the United States the desire and willingness of the medical profession to make a comprehensive survey of the medical resources of the country, and to prepare a complete invoice of these resources, setting forth not only the names of men trained in the specialties of medicine, surgery, and sanitation, but to include the extensive equipment under their control, such as hospital facilities and nurses.

The offer was actually made under date of April 26, 1916.[133] The letter containing it set forth the facts as to the membership of the medical bodies represented (the American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and the American College of Surgeons, representing approximately 70,000 medical men); the attitude of the medical profession toward preparedness, and the need for such preparedness along medical and surgical lines. It offered, on behalf of the committee, to make a survey of the medical resources of the country and to make an inventory thereof, including the availability of hospital facilities, buildings available for use as hospitals, facilities for transportation of sick and wounded, food supply and drug supply available, lists of trained nurses and other persons essential for hospital work. This offer was referred to the Secretary of War, who consulted with the Surgeon General. It was soon accepted, and steps were taken to carry it into effect.

Various members of the Committee on Medical Preparedness wired the Surgeon General, in the latter part of May, 1916, urging that a medical representative be placed on the contemplated council of executive information on preparedness then receiving legislative consideration.

The designation of the advisory body, as finally created by act of Congress approved August 29, 1916,[134] was Council of National Defense. The Council of National Defense, as created, consisted of the Secretary of War, the Secretary of the Navy, the Secretary of Agriculture, the Secretary of Commerce, and the Secretary of Labor, with an advisory commission of seven. It was created for the purpose of coordinating "industries and resources for the national security and welfare."

This advisory commission, as specified in the act in question, was to consist of persons having special knowledge of some industry, public utility, the development of some natural resource, or being otherwise specially qualified in the opinion of the council for the performance of the duties required of such an advisory body by the act. On October 11, President Wilson appointed the civilian advisory members of the council, among whom was a physician, Dr. Franklin H. Martin, of Chicago, Ill. The organization of the advisory council provided that each member of the commission gather about himself, for the most effective coordination of the activities he represented, a committee or board of representatives of the Government departments and of eminent civilian mmbers.

The medical committee consisted of Dr. Franklin H. Martin, chairman; William C. Gorgas, Surgeon General of the Army; William C. Braisted, Surgeon General of the Navy; Rupert Blue, Surgeon General of the Public Health Service; Col. Jefferson R. Kean, director general, military relief, American Red Cross; Dr. William H. Welch, member of the National Research Council; Dr. William J. Mayo, chairman of the Committee of American Physicians for Medical Preparedness; Dr. Frank F. Simpson, chief of Medical Section, Council of National Defense, and secretary of the Committee of American Physicians for Medical Preparedness.

The effect of having a doctor on the Advisory Commission of the Council of National Defense insured that the importance of medicine to any war army we might create would not be overlooked, as was the case in the Spanish-American War. Perhaps this was the greatest service which the council rendered to the Medical Department. It was far from the only service, however. Before the war opened for us it is probable that the principal work accomplished by the Medical Committee of the Council of National Defense was that of lining up the medical profession. A large body of medical men, fairly well classified according to their special qualifications, was thus actually available for immediate service when war came.[135] A committee on dentistry, consisting of seven members, was formed early. This was divided into five sections: Mobilizing dental educational activities, base hospitals, dental supplies, dental research, and the Preparedness League of American Dentists. The principal work of the medical committee, so far as supplies were concerned, consisted in the appointment of a "Committee for the Standardization of Medical and Surgical Supplies and Equipment." A committee on hospitals, known as the hospital committee, was organized in the early part of April, 1917.

Just as soon as the United States entered the war, all these committees became very active, and their preliminary work then proved the saving of months of time. For a fuller account of their activities, the chapter devoted to the Council of National Defense, in the body of the history, or the official reports of the council, should be consulted.

But the effect on our Medical Department of the World War period preceding American participation really went much further than the more or less tangible results which have just been mentioned. The immensity of the conflict was, of course, well known to practically everybody in the United States, and the vastness of the problems involved in caring for the enormous number of sick and wounded was hardly less well known. This led, when war came, to vast estimates of what would be needed by the Medical Department, prompt approval of such estimates by the War Department, and liberal appropriations by Congress. This change in a state of mind must be mentioned here both on account of its intrinsic importance and because of the great contrast with Spanish-American War days, when penuriousness at the start so handicapped the Medical Department that it was never able to recover. Very possibly in the World War, with an army representing nearly every home in the land, ample means would have been available in any event; on the other hand, without the earlier history of the World War to guide us, it is by no means certain that such wise liberality would have been manifested at the beginning, when it counted most.

Before we entered the war, preparation, except in the ways mentioned, lagged very considerably. There was certainly no rush to join the Medical Reserve Corps at this time, and on account of the Mexican border experience the National Guard Medical Department actually decreased very considerably in strength for the time being. Matters in these respects changed very notably, however, as soon as we actually entered the war, when medical officers and men poured into the service in a veritable flood. As both the Medical Reserve Corps and the Medical Department of the National Guard had existed long before the World War began, however, their organization can not be set down as affecting the creation of organizations which doctors could join.

Having such organizations in advance was of first importance, however, for when war came no delay was occasioned, as the machinery existed for taking care of all applicants for commissions. This point should be noted because the situation was so different from that which existed at the time of the Spanish-American War, when the places for doctors were so limited, being political or largely confined to contract surgeons, a status not generally considered commensurate with the dignity of the medical profession. The lack of places for enlisted men at the outbreak of the Spanish-American War has already been discussed; no similar difficulty existed in the World War. Familiarity with the experiences of the combatants before the United States entered the World War caused the medical profession of this country to realize in how great numbers they would be needed should we enter the conflict. Doubtless this realization would not have been the case, or at least not to the same extent, if we had gone into an unheralded war.

The Mexican border mobilization and not the World War was really responsible for a considerable increase in supplies, and was perhaps even more important in establishing a war supply system so that the machinery existed for setting about the actual purchase of supplies when war came.

Before we entered the war instruction of the medical profession in military matters as it affected members of that profession was carried out on a considerable scale so far as didactic teaching was concerned. Courses of lectures were given at many medical colleges and in various medical societies. This was perhaps of more value in stimulating interest than from what was actually learned, and yet its importance from the latter standpoint can not be disregarded. While this instruction was extended to a much greater number of doctors, the practical knowledge gained from having Medical Department field units and actual observation of their operation by the limited few of course carried field instruction much further. This was an incidental result of the Mexican mobilization and not of the World War.

It will be noted that the time given between the passage of the national defense act and the entry of the United States into the World War was short. For this reason not a great deal could be done in the interval in increasing the Medical Department of the Regular Establishment.

From the beginning in the war our medical officers were found with a number of the combatants in the rôle of observers, and their reports proved of a great deal of value.[136] Furthermore, study by our Regular and National Guard medical officers of what the medical departments of the various armies at war had accomplished was very general, and this resulted in the publication of numerous articles of particular importance.

During the years preceding our entrance into the World War, many American civilian practitioners, imbued with the spirit to serve in their professional capacities, allied themselves with the medical departments of one or another of the combatant armies in Europe. The valuable experiences they gained, largely surgical, were in many instances the subjects of articles in medical journals, published and widely read in America. Other interesting fields were opened, notably the psychiatric. American doctors who practiced abroad with the foreign armies also made notable contributions to our knowledge of what should be done in respect to certain medical organizations, with particular reference to the great desirability for cohesiveness in operating and hospital units, organized for immediate active service. As these latter contributions bore fruit in the pre-war arrangements of the Red Cross, they are discussed later under the subject of Red Cross Medical Department units.

The World War showed far more clearly than any previous war the necessity for specialists in the medical departments of armies. The observations of our civilian doctors before we entered the war was a potent factor here. This point was emphasized by them and led, when war came, to an actual contest among the various specialties to secure personnel and supplies for their particular needs. These civilian doctors became convinced that no matter how well qualified a doctor was, from the civilian standpoint, he needed additional instruction to qualify him for Army practice. This was partly responsible for the establishment of professional schools as soon as we entered the war. These not only provided review work but taught a great deal which was new and which had been brought out by the war. The military importance of correct professional practice, by the way, had never been as clearly shown as it was in the World War. While the assistance of good sanitation in adding to military strength had been appreciated for centuries, never before had the possibility of restoring wounded men to the ranks been so great. This was due of course to the advance in surgical practice. Before we entered the war literally thousands of men were fighting who, in pre-antiseptic days, would have been disabled for its entire period, if not forever.

American volunteer ambulance corps operated with the French long before we entered the war. Their ambulance sections served as a model for us later, and from their ranks came some of our experienced personnel.

Some changes in our Medical Department field organization were made, it is true, but these were put into effect rather from what was seen to be the need after we had entered the war than from anything we had learned previous to that time.

Long before the World War it was fully realized that the success of a medical department in combat was dependent more on adequate and rapid means of transportation for patients than on any other one factor. This was by no means a novel conclusion, therefore, from observation of the medical service of the combatants in the war prior to April 6, 1917; on the other hand, their successful utilization of rapid motor transport helped us materially to a realization of what we must provide in the way of motor evacuation facilities.

SUMMARY.

Having traced the various stages in the evolution of medical departments of armies in general, and their influence on the development of our own Medical Department to the point reached by the time we entered the World War, by way of summary, attention is directed to certain basic influences which have operated on nations throughout the ages, and which have culminated in the development of military medical departments, including our own.

While at the beginning of military history, medical departments of armies were very small and simply organized, by the time of the World War they had become most complicated, involving the expenditure of vast sums of money and requiring for their operation an enormous personnel. One naturally demands the reasons. It is obvious that no nation at war can afford to spend money needlessly and it can still less well afford to burden its already complicated military machine by personnel unless such personnel serves some very valuable purpose. The influences which have resulted in the very elaborate army medical departments of to-day may be summed up under politic, obligation, humanitarian, economic, and military efficiency. Seldom, if ever, in history has one of these operated to the exclusion of all the others and to-day all combine to make medical departments of armies what they are.

1. *Politic.*—For an example of this, and a very good one, we can go back as far as ancient Rome. It was then recognized as essential that the interests of the soldier in the medical way be carefully safeguarded in order to secure his loyal support. This is as true to-day as it was then, and has been so through the ages. The only exception that has been cited was under Charles the Fifth. This, it should be noted, was at the time when the common man was to all intents and purposes a serf, whose opinion amounted to little one way or another. To-day such practice would be absolutely inconceivable. It should be noted that even at that time important personages were well provided for in the way of medical service.

2. *Obligation.*—As early as ancient Rome, if not earlier, it was recognized that the state as a matter of right and justice had medical obligations to the soldier. Only in the Middle Ages was this feeling absent. Of course, it obtains to-day.

3. *Humanitarian.*—The humanitarian sense of the world has greatly increased since ancient days. As has been noted in the text, the spirit of humanity was first given large practical effect by Queen Isabella in the fifteenth century. The organization of the Red Cross some four centuries later was a much wider application of the same spirit. As noted in President Roosevelt's message quoted on page 58, the American public demands a high degree of excellence from the Medical Department of its Army. Nobody doubts that this is due to the high spirit of humanity inherent in our people which finds personal expression mainly in the Red Cross but which, at the same time, expects a high order of accomplishment from the official agency in charge of sick and wounded—the Medical Department of the Army. It is sometimes overlooked that this agency, no less than volunteers, is influenced by dictates of humanity.

4. *Economic.*—The human wastage of war, of course, has to be paid for, whether disabled men and the families of the dead are liberally provided for by legislation or not. With us, with the very large burden that we willingly put upon ourselves to take care of soldiers, the economic question assumes the largest importance. A medical department of sufficient size, and well organized, it is universally admitted, will actually save many lives, first, by good sanita-

tion, and second, by minimizing bad results in many cases of illness and injury, thus minimizing ultimate cost to the state. Furthermore, by excluding physically unfit men and by a final examination of all officers and soldiers on discharge, claims are reduced while at the same time justice can be done both to Government and soldier.

5. *Military efficiency.*—By the time of the World War, from the standpoints of policy, obligation, humanity, and economy, it would seem to have been inevitable that no civilized nation could have afforded not to have had an army medical department of such strength and so organized as to take full advantage of what has been demonstrated would be gained from the standpoint of policy, obligation, humanity, and economy. So far as these went, this was doubtless the case, yet in war in the last analysis everything must give way to military efficiency. Therefore, it is specially important here to trace what history has to offer on the influence of medical departments on military efficiency. A good deal might be said on this subject so far as home territory is concerned; in fact, as late as the Spanish-American War our Army was wrecked in the home camp through diseases which, whatever may have been the case then, it is certain an efficient medical department could prevent to-day. Yet at home it is so well recognized by all military students that all the influences which have been previously mentioned, as well as military efficiency, demand a large enough medical department to attain maximum results, that it would be superfluous to discuss what is really a self-evident fact.

In order to form an opinion on the subject at issue it is necessary, therefore, to turn to the army operating in the field.

Realization of the importance of the Medical Department from the standpoint of military efficiency in the field is comparatively a new thing. The general military opinion on this subject as late as the early days of the Civil War is believed to be well expressed in a letter written by General Halleck, then general in chief of the Armies of the United States:

> WAR DEPARTMENT,
> *Washington City, D. C., August 29, 1862.*
>
> SIR: The Secretary of War desires me to acknowledge the receipt of your communication of the 21st instant, submitting a project for a Hospital Corps, and to inform you that the subject was referred to the general in chief, whose views, adverse to the project, are expressed in the following words: "Our army trains are already much too large and very seriously impede the movement of our troops in the field. The enemy have great advantages over us in this respect. To organize such a medical force as is here proposed would, besides involving enormous expenses, greatly increase this evil. Moreover, the presence of noncombatants on or near the field of battle is always detrimental, as most panics and stampedes originate with them. Medical soldiers would not obviate the necessity of sending fighting soldiers from their ranks with their wounded, for the former would seldom be near enough to the enemy to perform that duty. The soldier can be very much relieved by hiring cooks, nurses, and attendants in hospitals, whenever the circumstances will permit; but I can see no advantage in having them enlisted for that special purpose. All persons so employed, are, by law, subject to Army Regulations. I regard this project as one calculated to increase the expenses and immobility of our Army by adding to it a large corps of noncombatants, without any corresponding advantages. I therefore report against its adoption."
>
> Very respectfully, your obedient servant,
>
> P. H. WATSON,
> *Assistant Secretary of War.*

Later, Letterman's demonstration of what could actually be done by an efficient field medical department in battle caused a reversal of opinion; and the orders which resulted in the organization of the ambulance and field hospital service in the Army of the Potomac, were finally extended to all the Federal Armies by a confirmatory act of Congress. Yet the question was by no means finally settled so far as our Army was concerned, for with the end of the Civil War this organization disappeared and we went into the Spanish-American War no better off in respect to field medical organization than we were in the Mexican War. Nor is the question an easy one to settle. The object of an army, of course, is the defeat of the enemy, and to this everything else must give way. In the older day it was the well-established military belief that the medical department at the front was solely a source of weakness because of the additional mouths to feed and bodies to supply, plus interference with the movement of troops without at the same time any additional hands to destroy the enemy. Latterly, it has been more clearly realized by military students that all of war does not consist of destroying the enemy at a blow, but partially in preserving one's own strength, so that ultimately the same result will be obtained in fuller measure. The medical department, as history shows, conduces to this result by: Good sanitation; prompt and efficient treatment, so that the effects of wounds are minimized, with earlier recovery; and by sustaining morale. Both the Franco-Prussian War and the Russo-Japanese War show how one army profited over its enemy by better sanitation, and our own experience in many fields since the Spanish-American War demonstrates even more fully what wonderful results can be obtained through good modern sanitary practice. Even before our entry into the World War modern surgery had resulted in restoring wounded to the ranks in vast numbers. The modern soldier is believed to fight better if he knows that in case of being wounded he will receive prompt attention (from history it is apparent this was no less true in ancient days). If one agency (the medical department) is appointed to care for wounded, no excuse is presented for leaving the line of battle; if there is no such agency, leaving the line to attend wounded comrades becomes a matter of very serious moment, more especially so as this will occur to the maximum extent when the loss can be least well sustained—heavy combat and heavy losses. On the other hand, it is realized that the medical department at the front can be of only such strength as to carry out these objects reasonably well under ordinary battle field conditions. With extraordinary demands it must prove too small, though, even so, temporarily supplementing it after a battle, if it is of the proper size and properly organized, should provide efficient medical service with the military benefits therefrom.

By the time of the World War our Medical Department strength at the front was a compromise; in other words, a medical department strength capable of carrying out the objects recited above, at the same time not so great as to interfere seriously with the needs of the rest of the Army. This was exemplified in the Tables of Organization for our own Medical Department at the front as well as in those of the other large nations.

REFERENCES.

(1) Deuteronomy, xxiii, 9–14.

(2) Withington, E. T.: Medical History from the Earliest Times. London, 1894, 70.

(3) Withington: Op. cit., 73.

(4) Withington: Op. cit., 71.

(5) Garrison, F. H.: Notes on the History of Military Medicine. *The Military Surgeon*, Washington, D. C., 1921, xlix, No. 6, 623.

(6) Parkes, E. A.: Manual of Practical Hygiene. Vol. II. New York, Wm. Wood & Co., 1883, 370.

(7) Withington: Op. cit., 116.

(8) Garrison, F. H.: Op. cit., 1922, l, No. 1, 16.

(9) Withington: Op. cit., 117.

(10) Garrison: Op. cit., 1922, l, No. 2, 152.

(11) Withington: Op. cit., 224.

(12) Heizmann, Charles L.: Military Sanitation in the Sixteenth, Seventeenth, and Eighteenth Centuries. *Journal of the Military Service Institution of the United States*, 1893, Governors Island, N. Y., xiv, 711.

(13) Garrison: Op. cit., 1922, l, No. 3, 331.

(14) Heizmann: Op. cit., 716.

(15) Heizmann: Op. cit., 719.

(16) Gore, A. A.: The Story of Our Services Under the Crown. A Historical Sketch of the Army Medical Staff. London, Ballière, Tyndall & Cox, 1879, 60.

(17) Gore: Op. cit., 57.

(18) Gore: Op. cit., 51–58.

(19) Heizmann: Op. cit., 721.

(20) Garrison: Op. cit., 1922, l, No. 4, 456.

(21) Heizmann: Op. cit., 725.

(22) Heizmann: Op. cit., 729 et seq.

(23) Pringle: Observations on the Diseases of the Army. London, 1752, preface, viii–ix.

(24) Gore: Op. cit., 87.

(25) Gore: Op. cit., 123.

(26) Koehler, A.: Veröffentl. a. d. Geb. d. Mil. San.-Wes., Berl., 1899. Heft 13, 129–218.

(27) Koehler: Op. cit., 234–262.

(28) Brown, H. E.: Medical Department of the United States Army, 1775–1873. Washington, D. C., Surgeon General's Office, 1873, 51.

(29) Brown: Op. cit., 14.

(30) Garrison: An Introduction to the History of Military Medicine. Philadelphia and London, W. B. Saunders Co., 1913, 432.

(31) Larrey: Mémoires de Chirurgie Militaire et Campagnes. Paris, 1812, 58, 60, 150.

(32) Mémoires. Acadēmie de Mēdecin. Paris, 1833, II; 1–23 (Poriot).

(33) Gore: Op. cit., 153.

(34) Thier, M. Adolph: History of the Consulate and the Empire of France Under Napoleon. Philadelphia, J. B. Lippincott & Co., 1861, Vol. III, 165–167; 185–186.

(35) Brown: Op. cit., 81.

(36) Brown: Op. cit., 177, et seq.

(37) Brown: Op. cit., 198.

(38) Personnel and Matériel of the Medical Department of the Army of 30,000 Men Ordered to Turkey Under Command of Lord Raglan. London, Stewart & Murray, 21.

(39) Report Upon the State of the Hospitals of the British Army in the Crimea and Scutari. London, 253 et. seq.

(40) Ibid., 68 et seq.

(41) Dictionary of National Biography Supplement. Vol. I. London, C. W. Sutton, 1901, 406–408.

(42) Report to the Right Honorable Lord Paumure, Minister at War, of the Proceedings of the Sanitary Commission Dispatched to the Seat of War in the East, 1855–1856. London, 201–215.

(43) Durant, J. H.: Un Souvenir de Solferino. Genève, Imprimerie de Jules Gme Fick, 1863.

(44) G. O., No. 147, Headquarters Army of the Potomac, August 2, 1862.

(45) Medical and Surgical History of the War of the Rebellion. Part III. Medical Volume, 897.

(46) Ibid., Part III. Surgical Volume, 934.

(47) Duncan, L. C.: The Medical Department of the United States Army in the Civil War. *The Military Surgeon*, Washington, D. C., xxxii, No. 3, 222.

(48) Medical and Surgical History of the War of the Rebellion. Part III. Surgical Volume, 932.

(49) Letterman, Jonathan: Medical Recollections of the Army of the Potomac. New York, D. Appleton and Co., 1866, 5.

(50) Letterman: Op. cit., 58.

(51) Letterman: Op. cit., 41.

(52) Letterman: Op. cit., 74.

(53) G. O., No. 106, W. D., A. G. O., March 16, 1864.

(54) Stiles, Charles J.: History of the United States Sanitary Commission. Philadelphia, 1866.

(55) Ross, Lemuel: Annals of the United States Christian Commission. Philadelphia, J. B. Lippincott & Co., 1868.

(56) Duncan, L. C.: The Comparative Mortality of Disease and Battle Casualties in the Historic Wars of the World. *Journal Military Service Institution of the United States*, Governors Island, N. Y., 1914, liv, 141, 177.

(57) Prinzing, Friedrich: Epidemics Resulting from Wars. Oxford, The Clarendon Press, 1916, 189 et seq.

(58) Brown: Op. cit., 256.

(59) G. O., No. 51, Headquarters of the Army, Adjutant General's Office, Washington, June 24, 1893.

(60) G. O., No. 78, Headquarters of the Army, Adjutant General's Office, Washington, September, 22, 1893.

(61) Annual Report of the Surgeon General, United States Army, 1894, 36.

(62) Sternberg, Martha L.: George M. Sternberg. A Biography. Chicago, American Medical Association, 1920, 131.

(63) Osler, Sir William: The Evolution of Modern Medicine. Yale University Press, 1921, 208.

(64) Osler: Op. cit., 214.

(65) Stevenson, W. F.: Wounds in War. The Mechanism of Their Production and Their Treatment. Longmans, Green & Co., London, New York and Bombay, 1904, 128.

(66) Reed, Vaughan, and Shakespeare: Report on the Origin and Spread of Typhoid Fever in United States Military Camps During the Spanish War of 1898. Washington, Government Printing Office, 1904, 666.

(67) G. O., No. 124., W. D., Washington, A. G. O., August 20, 1898.

(68) McPherson, Maj. Gen. Sir W. G.: History of the Great War, Based on Officer's Documents. Vol. I. London, 1921, 1.

(69) Prinzing: Op. cit., 291.

(70) Osler and McRae: Modern Medicine. Its Theory and Practice. Philadelphia, Lea Brothers & Co., 1907, Vol. II.

(71) Makins, G. H.: Surgical Experiences in South Africa, 1899–1900. Philadelphia. P. Blakiston's Son & Co., 1904, 31

(72) Brereton, Lieut. Col. F. S.: The Great War and the R. A. M. C. London. Constable & Co., 1919, 6.

(73) Reports of Military Observers Attached to Armies in Manchuria During the Russo-Japanese Wars. Part IV. Report of Maj. Charles Lynch, Medical Department, General Staff. War Department, Office of the Chief of Staff. Washington, Government Printing Office, 1907.

(74) G. O., No. 15, Headquarters of the Army, Adjutant General's Office, Washington, February 18, 1903.

(75) Commission to Investigate Conduct of War Department in War with Spain. Washington, Government Printing Office, 1900. Vol. I, 237.

(76) Ibid., Vol. I, 188, 189.

(77) Annual Report of the Surgeon General, United States Army, 1908, 122 et seq.

(78) Annual Report of the Surgeon General, United States Army, 1905, 130.

(79) G. O., No. 67, W. D., May 2, 1908.

(80) Bull. No. 16, W. D., June 22, 1916.

(81) Weekly Report from the Personnel Division, S. G. O., for week ending Nov. 15, 1918. On file, Record Room, S. G. O., Weekly Report File (Personnel).
(82) First indorsement from the Surgeon General to The Adjutant General, March 11, 1912. Subject: Miss Delano's Resignation. On file, Record Room, S. G. O., 128452–28.
(83) Weekly Report from the Superintendent Army Nurse Corps to the Surgeon General for the week ending November 15, 1918. On file, Record Room, S. G. O., Weekly Report File (Army Nurse Corps).
(84) Annual Report of the Surgeon General, United States Army, 1902, 42.
(85) G. O., No. 80, W. D., May 15, 1908.
(86) Plans and Specifications for Base and Stationary Hospitals. Surgeon General's Office, October 30, 1906.
(87) Annual Report of the Surgeon General United States Army, 1908, 124.
(88) Letter from the Surgeon General to the Secretary of War, July 11, 1904. Subject: Change in Method of Making Reports of Sick and Wounded. On file, Record Room, S. G. O., 40719–10 (Old Files).
(89) Tables of Organization, United States Army, 1916.
(90) Manual for the Medical Department, 1916, par. 804.
(91) Ibid., 1911, Part II.
(92) Act of Legislature, State of New York, 1905.
(93) S. O., No. 64, W. D., March 18, 1910.
(94) Annual Report of the Surgeon General, United States Army, 1912, 188.
(95) Ibid., 1914, 173.
(96) Ibid., 1916, 205.
(97) Ibid., 1917, 316.
(98) Letter from the Surgeon General to The Adjutant General, April 7, 1911. Subject: Ambulance Companies and Field Hospitals. On file, Record Room, S. G. O., 135334–A (Old Files).
(99) Indorsement from The Adjutant General to the Commanding General, Central Division, October 3, 1911. On file, Record Room, S. G. O., 136991–P (Old Files).
(100) Letter from the Acting Surgeon General to The Adjutant General, April 28, 1914. Subject: Additional Ambulance Companies and Field Hospital Companies. On file, Record Room, S. G. O., 128732–I–3 (Old Files). Letter from the Surgeon General to The Adjutant General, May 6, 1914. Field Hospital No. 7 and Ambulance Co. No. 7. On file, Record Room, S. G. O., 148945 (Old Files). Letter from the Surgeon General to The Adjutant General, May 8, 1914. Subject: Ambulance Co. No. 8, On file, Record Room, S. G. O., 148988 (Old Files).
(101) Letter from the Surgeon General, to The Adjutant General, August 17, 1916. Subject: Ambulance Company, Hawaiian Department. On file, Record Room, S. G. O., 159957 (Old Files).
(102) Letter from the Surgeon General to The Adjutant General, June 22, 1896. Subject: Discontinuance of Company of Instruction at Fort Riley, Kans. On file, Record Room, S. G. O., 19944 (Old Files).
(103) Annual Report of the Surgeon General, United States Army, 1899, 21.
(104) Letter from the Surgeon General to Chief Surgeon, Department of California, August 23, 1899. Subject: School of Instruction for Hospital Corps at Angel Island. On file, Record Room, S. G. O., 62633 (Old Files).
(105) Annual Report of the Surgeon General, United States Army, 1901, 40.
(106) Letter from the Surgeon General to The Adjutant General, October 30, 1902. Subject: Designation of Companies of Instruction, Hospital Corps, as No. 1 and No. 2. On file, Mail and Record Division, A. G. O., 458315 (Old Files).
(107) G. O., No. 24, Headquarters of the Army, Adjutant General's Office, Washington, March 7, 1903.
(108) Letter from the Military Secretary's Office, War Department, to the Surgeon General, September 29, 1904. Subject: Companies of Instruction, Hospital Corps. On file, Record Room, S. G. O., 65168–138 A.
(109) Annual Report of the Surgeon General, United States Army, 1907, 125.
(110) Letter from the Surgeon General to The Adjutant General, May 12, 1909. Subject: Camps of Instruction for Militia Medical Officers. On file, Record Room, S. G. O., 127733 (Old Files).

(111) G. O., No. 100, W. D., June 1, 1910.

(112) S. O., No. 161, W. D., July 10, 1908.

(113) A Study in Troop Leading and Management of the Sanitary Service in War. J. F. Morrison and F. L. Munson. Ketcheson Printing Co., Leavenworth, Kans., 1910.

(114) Munson, E. L.: The Principles of Sanitary Tactics. Banta Publishing Co., Menasha, Wis., 1911.

(115) G. O., No. 132, W. D., July 11, 1910.

(116) Report from Division Surgeon, Provisional Division, Fort Riley, Kans., to the Adjutant General, Provisional Division, Fort Riley, Kans., March 1, 1903. Subject: Operation of the Medical Department of the Division. On file, Record Room, S. G. O., 91156–33 (Old Files).

(117) Annual Report of the Surgeon General, United States Army, 1909, 130.

(118) Report of Chief Surgeon, Camp of Instruction, American Lake, Washington, September 6, 1910. On file, Record Room, S. G. O., 132205–P (Old Files).

(119) Report from Chief Surgeon, Camp of Field Instruction, Fort Benjamin Harrison, Ind., to the Surgeon General, September 15, 1912. On file, Record Room, S. G. O., 140605–M. Report of Chief Surgeon, Connecticut Maneuver Camp, to the Adjutant General, Eastern Department, August 31, 1912. On file, Record Room, S. G. O., 140632–N.

(120) Memo. from the Chief of Staff to The Adjutant General, March 7, 1911. Subject: Mobilization of Division, Department of Texas. On file, Record Room, S. G. O., 1361861 (Old Files).

(121) Report from Division Surgeon, Second Division, to the Surgeon General, July 1, 1913. On file, Record Room, S. G. O., 144955–K–6–A (Old Files).

(122) Birmingham, H. P.: Sanitary Work of the Army at Vera Cruz. *The Military Surgeon*, 1915, xl, No. 4, 205–221.

(123) Letter from the department surgeon, Southern Department, to the Surgeon General, March 15, 1916. Subject: Expeditionary Forces. On file, Record Room, S. G. O., 156351 (Old Files).

(124) Report from the division surgeon, punitive expedition, to the Commanding General, Punitive Expedition, February 15, 1917. On file, Record Room, S. G. O., 156351–H (Old Files).

(125) Report from the division surgeon, Twelfth Provisional Division, to the department surgeon, Southern Department, December 31, 1916. On file, Record Room, S. G. O., 1054–2310 (Old Files).

(126) Circular No. 62, Headquarters of the Army, Adjutant General's Office, Washington, December 24, 1902.

(127) Report from the sanitary inspector, Maneuver Division, to the Surgeon General, September 11, 1911. On file, Record Room, S. G. O., 136186–230 (Old Files).

(128) G. O., No. 76, W. D., June 9, 1911.

(129) Compiled from Sick and Wounded Cards. On file, Surgeon General's Office.

(130) G. O., No. 68, W. D., June 1, 1917.

(131) Shown on Consolidated Statistical Sheets, Mexican Border, 1916. On file, Statistical Division, S. G. O.

(132). G. O., No. 31, W. D., September 12, 1912, and G. O., No. 45, W. D., June 9, 1914.

(133) Report of the chairman of the committee on medicine and sanitation of the advisory commission of the Council of National Defense, Washington, D. C., Government Printing Office, April 1, 1918.

(134) Bull. No. 33, W. D., September 9, 1916.

(135) Second Annual Report of the Council of National Defense for the Fiscal Year Ended June 30, 1918, 103.

(136) Annual Report of the Surgeon General, United States Army, 1916, 18, 19.

II. DEVELOPMENT OF RED CROSS MEDICAL DEPARTMENT UNITS.

During the two years and eight months that the United States occupied the difficult rôle of a neutral, many of our distinguished medical men went abroad to render service to humanity by assisting in the care of the wounded. They learned, at close range, some of the complexities of medical organization, the difficulties attending the operation of improvised medical units, and the enormous delays in the procurement of adequate equipment under war conditions. The necessity for preparedness in the matter of the more complex medical units in the same way as for batteries of artillery and regiments of infantry began thus to be recognized by individuals in the medical profession outside of the Army medical staff. A number of small surgical groups from American medical schools in 1916 had served in succession at the American Ambulance at Neuilly, a suburb of Paris; and the British war office, at the suggestion of Sir William Osler and Hon. Robert Bacon, had invited various American university medical schools to send similar units to serve in British hosptials. A considerable number of leading men in the medical profession in the United States in this way gained a knowledge of medical conditions in war and of the new problems of military surgery which were later of much value in the building up of the medical service of our Army.

BASE HOSPITALS RECOMMENDED.

Maj. Karl Connell, M. C., of the New York National Guard, returned with the lesson that the organization and equipment of base hospitals could not, without disaster, be postoned until war was upon us. Dr. George W. Crile, who had taken to France a surgical group from the Lakeside Hospital at Cleveland, made the valuable suggestion [1] that base hospitals should be organized from the staff of large, well-organized hospitals. "These units will be most efficient if they are exclusively made up of men who have had similar training and who know each other well, and if they have associated with them a nursing staff familiar with their methods." Doctor Crile brought these ideas to the attention of the Surgeon General, who was impressed by them, but, it seemed, attached more importance to the idea of personal leadership than of a parent institution as the organizing agency. He authorized, accordingly, three members of the Medical Reserve Corps, Dr. G. W. Crile, Dr. Harvey Cushing and Dr. J. M. Swan, to proceed to organize base hospitals. Doctor Crile was professor of surgery in the Western Reserve University; Doctor Cushing held a like position in the Harvard Medical School; and Doctor Swan was a prominent internist of Rochester, N. Y., not connected with any medical school or medical group.

This new departure on the part of the Surgeon General caused a protest from the headquarters of the American Red Cross in Washington, based on the provision of their charter, by which they were charged with the furnishing of volunteer aid to the sick and wounded of the armed forces in war, and also on the understanding which had previously subsisted between the Red Cross and the Surgeon General's Office, that the Red Cross should undertake the organization of medical units from civil life. As evidence of such an understanding, they called attention to Circular No. 8 of the Surgeon General's Office, dated September 10, 1912, in which the details of organization, as approved at that time, were laid down.

ORGANIZATION OF 1915.

In the annual meeting of the National Red Cross at Washington, in December, 1915, the by-laws were amended so as to divide the entire field of Red Cross activities into two great departments of civil and military relief. The latter included the bureaus of medical service, nursing service, and supplies, and furnished the machinery by which the Red Cross could operate effectively as the auxiliary of military medical services. After much discussion as to whether the first director general, upon whom should fall the responsibility of organizing the Department of Military Relief, should be a general of the line or a medical officer, it was recognized that the problems to be solved were predominantly medical and a medical officer of the Army, Col. Jefferson R. Kean, was selected.

The question between the Surgeon General and the Red Cross as to who should organize the base hospitals was decided by a compromise. It was determined that the Red Cross should organize them, but that it should be on strictly military basis, and that the personnel should be commissioned and enlisted men of the Reserve Corps, so that, when called into active service by the President, they should pass actually and completely into the Army, the authority of the Red Cross ceasing as completely as does the parental control in the case of the young recruit when he enlists and marches away with his company.[2]

ORGANIZATION OF BASE HOSPITALS.

Colonel Kean reported at Washington on January 15, 1916, and in February had the organization of the new Department of Military Relief sufficiently advanced to be able to leave Washington for a visit to several medical schools which had been selected as desirable "parent institutions" for future base hospitals.

In the Spanish-American War, and all of our previous wars, base hospitals were built up slowly and painfully, as personnel and equipment could be got together. Members of the professional staff were strangers to each other and to their commanding officers, and many of them were appointed for political rather than professional reasons. The solving of their personal equations and the fitting of each to the duties for which he was best qualified presented, therefore, a slow and difficult problem, which apparently it was impossible to solve by any preparatory steps in time of peace, since these large units had no peace existence. It was determined to shorten and facilitate this slow process of integration by adopting the suggestion of Crile, above mentioned, to utilize the cohesion and training of the staffs of the great hospitals by using these as the nuclei of the base hospitals. In this way could be obtained units in which the medical officers and nurses were picked groups, known to each other and accustomed to work together, and, so far as professsional work was concerned, always in training.

EQUIPMENT.

Equipment for base hospitals had never been provided by the War Department in time of peace, though Surgeon General O'Reilly, who took to heart the lessons of unpreparedness of the Spanish-American War, had established separate depots for medical field supplies, and had set to work to accumulate the complete equipment of field hospitals and other medical units of the service of the front. This had been carried on by his successors, and the Medical Department found itself, at the beginning of 1917, prepared to equip all such units prescribed by the Tables of Organization for the maximum army then contemplated, about 300,000 men. But equipment of base hospitals with the beds, mattresses, bedding, furniture, and utensils was not only very costly but exceedingly bulky, requiring for a 500-bed hospital about 10,000 cubic feet. Storage space was a difficult question in the Army and was not to be had on such a scale. In fact, it had been a matter of much difficulty and patient insistence through years to get storage for the field units above mentioned. The limitations of both the annual appropriations and of available storage thus stood in the way of such provision. Yet it was recognized that when war comes, base hospitals are needed long before it is possible to purchase this elaborate equipment. The conversion of appropriations into hospital equipment is an even slower process than the conversion of casual medical personnel into trained and disciplined units, being, under the disordered trade conditions of war, a matter of many months. Therefore, it was evident that as personnel without equipment is useless, the Red Cross would have to provide the equipment also. It was determined that the local Red Cross chapters in the cities where base hospitals were to be organized should be asked to furnish the money for the equipment in the same way that the medical schools or great hospitals were to furnish the personnel. It fell to the new director general to persuade the parent institutions to harbor and cherish within themselves a military organization which, when called into activity, would deplete their professional staff nearly to the point of paralysis, and also to induce the chapters to raise large sums of money for these new medical units.

FIRST BASE HOSPITALS.

On February 1, 1916, two weeks after he had reported in Washington for duty with the Red Cross, Colonel Kean started visiting different cities with the view to making arrangements, with prominent representatives of the medical profession, for the organization of the following base hospital units:

New York City: The Presbyterian Hospital Unit (Base Hospital No. 2), under Dr. George E. Brewer; The Bellevue Hospital Unit (Base Hospital No. 1), under Dr. George David Stewart; The New York Hospital Unit (Base Hospital No. 9), under Dr. Charles L. Gibson.

Boston, Mass.: The Harvard University Unit (Base Hospital No. 5), under Dr. Harvey Cushing; The Massachusetts General Hospital (Base Hospital No. 6), under Dr. Frederick A. Washburn, superintendent of the hospital; The City Hospital Unit (Base Hospital No. 7), under Dr. J. J. Dowling, superintendent of the hospital.

Rochester, N. Y.: The Rochester General Hospital Unit (Base Hospital No. 19), under Dr. John M. Swan.

Cleveland, Ohio: The Lakeside Hospital Unit (Base Hospital No. 4), under Dr. George W. Crile.

It will be observed that the numbers designating these units do not correspond with the order in which their creation was initiated, the reason being that a hospital was not given a number and its existence officially recognized until satisfactory arrangements had been made with the local chapter, or otherwise, for its equipment.

Funds for Equipment.

The difficult question of the donation of equipment was first taken up with a chapter on February 17, 1916, when the director general appeared before the New York chapter, which met at the house of Mrs. Whitelaw Reid, the venerable Joseph H. Choate presiding. The whole question of the relation between the Red Cross and the medical services of the armed forces was fully discussed, and the natural and obvious question was asked, why the Government did not furnish the equipment for these units which, in time of war, would become incorporated into the Army and Navy. In reply it was pointed out that it was idle to criticize Congress or the War Department for this lack. Congress did not prepare the military estimates, and those who did were deeply interested in what they believed to be more important needs. The Army was in need of a vast number of costly things for the arming and equipment of troops for war, and until these were provided it was most unlikely that the military authorities would be willing to see large sums expended and precious storage space absorbed for these bulky base hospitals. It was also pointed out that, granting in theory the obligation of the War Department to furnish this equipment, yet the most logical theories did not equip hospitals or relieve the sufferings of wounded men; and so, in order that they might be promptly cared for, the Red Cross or some similar agency must provide, in advance, the necessary means. The matter was finally decided favorably by an earnest speech of the Hon. Robert Bacon, lately Ambassador to France. He had personally assisted in the rescue of the wounded in the Battle of the Marne and had seen the pitiful results of medical unpreparedness. To his view the matter was not only obvious, but urgent, and he called upon those present to accept the responsibility for the equipment of the proposed hospitals and to begin immediately to meet it. When the meeting adjourned it was found that nearly $30,000 had already been pledged. So prompt and hearty a response not only placed the project on its feet, but set an example which could not but exert a potent influence upon other chapters.

This, in truth, was a fair beginning, but many difficulties remained to be surmounted.

The cost of the equipment was estimated by the Surgeon General's Office, with peace-time markets and the rather Spartan standards of the Regular Service, at $25,000, but this made no allowance for the fads and fancies of surgical experts, or even for such valuable luxuries as portable laundries and ice plants, so this figure was soon found inadequate. Some of the units ultimately expended from three to five times this amount. These large sums were contributed mostly by men of affairs who were accustomed, when they put money into any undertaking, to acquire a voice in its organization and control. They naturally expected, therefore, to have a voice in the selection of directors and chiefs of service, and, of course, in the purchase of equipment. It seemed, however, not the part of wisdom to admit such influence, and so it was announced that these units, being military, should be immediately under a military authority, and being, at the same time, medical, their medical and nursing staffs would desire and expect that the direct control over them would be of a professional character. Their organization, therefore, was managed directly from the office of the director general in Washington, who was constantly in touch with the wishes of the Surgeon General. The chapters accepted, with good grace, the relation of "Big Sister" to the medical units, which carried the obligation to help without any parental authority.

The feeling that purchases should be made locally, as far as possible, was natural and strong, and was deferred to, but any efforts to standardize, especially in surgical instruments and appliances, caused trouble. Among distinguished surgeons in civil life individual taste in the patterns and designs of surgical instruments had as wide and unquestioned a latitude as in the designs of ladies' bonnets, and they were agreed in the belief that all Army equipment was antiquated and all Army methods of administration were "red tape." This conflict of opinions was finally solved by the Medical Advisory Board of the War Council, which appointed a board of surgeons of national reputation to select standard types of instruments and appliances, and then forbade the manufacture of any other.

STORAGE OF EQUIPMENT.

Storage was another difficult question which pressed for a solution as soon as deliveries of equipment began to be made, and it was claimed, with insistence, that the War Department, for whose use this material had been purchased, should at least be willing to store and care for it. This was readily admitted in principle by the Secretary of War, who authorized it wherever it could be done without detriment to the interests of the military service, but it brought practically no relief, because there was no storage room to spare and there were apparently no funds available for renting storage. Permission to use the buildings at one or more unoccupied posts was finally obtained, and the equipment of four New York base hospitals was stored at Fort Schuyler. Most of the chapters, however, had to obtain and pay for their own storage until the entrance of the United States into war brought a solution of the difficulty by its employment of the equipment in active service and its ultimate donation to the United States.

The many difficult and vexatious questions connected with the purchase of the base hospital equipment for both Army and Navy were worked out with admirable patience and intelligence by Medical Director T. W. Richards, U. S. N., who was detailed July 1, 1916, to report to the director general of military relief, as his assistant for the purpose of taking charge of naval Red Cross activities, and particularly for the organization of naval base hospitals. The necessities of our Navy in this matter were definite and important, and are stated by Commander Richards in a report[3] which should be read by those having special interest in the development of Red Cross medical units for that service.

NATIONAL GUARD ON THE BORDER.

Popular interest in the Red Cross was much stimulated during the summer of 1916 by our disturbed relations with Mexico, which resulted in the calling into active service of the National Guard and in its being stationed, together with the bulk of the Regular Army, along the Mexican border. No Red Cross units were called into active service at this time, as the Medical Department believed that its resources were adequate for the expansion necessitated by this mobilization, and also because of an opinion given by the Judge Advocate General of the Army that under the law the President of the United States is not authorized to call into active service the Red Cross units except in case of war or when war is imminent. A number of nurses, 117 in all, however, were furnished by the Red Cross nursing service acting in its rôle as a reserve for the Army Nurse Corps, and these did excellent service in the temporary hospitals on the Mexican border.

COMMITTEE OF MEDICAL ASSOCIATIONS.

The by-laws of the Red Cross, in the amendments which provided for the department of military relief, provided also for a National Committee on Red Cross Medical Service. This committee, composed of distinguished members of the medical profession in all parts of the country, was intended to be the principal agent through which the department of military relief would act in the enrollment and organization of the medical profession for service with the Red Cross in time of war. This was recognized as a very difficult and delicate undertaking. A new and powerful agency, however, which at first appeared to thwart the efforts of the Red Cross for such organization, resulted in making it possible. The presidents of the five great medical associations of the United States—The American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and the American College of Surgeons—jointly appointed a committee to make a comprehensive survey of the medical resources of the country, including all data required for mobilization of the medical profession, and this committee, as stated elsewhere, on April 26, 1916, made an offer of its services and of those of the 70,000 medical men which it represented to the President to assist the medical development of the Army and Navy.[4] The director general of military relief, who was invited to be present at the meeting of this committee, pointed out that the work proposed by it covered ground which was assigned to the American Red Cross by its charter and by the presidential proclamation of August 22, 1911, and proposed that this committee should work either through the Red Cross or in conjunction with it. This suggestion, after due deliberation on the part of the committee, was accepted to the extent that an agreement was entered into that they should cooperate with the American Red Cross through its National Committee on Red Cross Medical Service, which committee should be made an interlocking one with the committee of the associated medical societies by having as members all the members of the committee of the associated societies. At a meeting of the National Committee on Red Cross Medical Service, held at Detroit at the time of the meeting of the American Medical Association, in June, 1916, various questions connected with the organization of base hospitals were discussed. It was pointed out that there was in the public mind a fixed conception of a hospital as a building occupied for the treatment of the sick rather than a vital unit which could be transported wherever the Government might need it, and the medical profession, as well as the public at large, found it difficult to visualize these organizations or to appreciate them at their true value and importance until one should be demonstrated to them by an actual mobilization. The national committee, therefore, requested the Red Cross authorities to mobilize one of its newly organized units in Philadelphia on October 28, 1916, at which time and place the committee would have a called meeting.

FIRST MOBILIZATION OF A BASE HOSPITAL.

The purposes of this mobilization were primarily to demonstrate that the organization existing on paper was a practical and serviceable one; secondly, to ascertain what difficulties would stand in the way of such a mobilization, in order that they might be met and removed; and thirdly, for the instruction in medical preparedness of the great body of surgeons who would be in Philadelphia at that time in attendance upon the Clinical Congress of Surgeons and the American College of Surgeons.

The Lakeside Hospital Unit from Cleveland, Ohio, Base Hospital No. 4, was selected for the purpose of this mobilization. It was asked to furnish a staff of 16 medical officers (including specialists), 25 nurses, and the necessary administrative personnel. The equipment was brought from the Red Cross depot at the Bush Terminal, Brooklyn, and was complete in all respects, so that every necessity of the wounded man could be promptly and efficiently met. The housing was furnished by tentage supplied by the United States Government from its Philadelphia depot; and the camp was erected by a detachment of the United States Medical Department sent over from Washington. The location of the camp on the Belmont Plateau, in Fairmount Park, Philadelphia, was an ideal one in all respects. The tentage, in as compact arrangement as the convenience and administration permitted, covered an area 1,000 feet long and 500 feet broad, being about 12 acres in extent. The mobilization of this hospital marked an important step in Red Cross development as concerned the obligations of the Red Cross to assist the medical service of the armed forces in time of war. It was the first practical and concrete demonstration of the ability of the Red Cross to do so. It took the scheme of Red Cross military units out of the domain of theory into that of accomplished fact.

FURTHER ORGANIZATION.

The five months intervening between the mobilization of Base Hospital No. 4 at Philadelphia and the declaration of war against Germany constituted a period of great activity and development in all branches of Red Cross organization relating to the military establishment. There was active correspondence with the various medical centers, many of which were anxious to organize units but had very vague notions as to what was required, in spite of the fact that the organization of Red Cross base hospitals had been quite fully explained in an article published in *The Military Surgeon* for May, 1916, reprints of which had been liberally distributed to correspondents. Before athorization was given for the creation of a base hospital at an institution, it was necessary to ascertain whether it had a staff large enough to furnish the 23 medical officers needed, and whether it was sufficiently representative to insure a capable and efficient staff. Then, too, the very delicate question had to be decided as to the selection of the director to whom the task of organization should be intrusted, as the success of the unit would depend upon his possession of sufficient professional reputation and leadership to insure that his premiership would be recognized by his professional associates. The question, too, of financial backing of the proposed unit by the local Red Cross chapter had to be taken up in order to furnish funds for the purchase of equipment. If no local Red Cross chapter was in existence, steps were taken in some cases to organize one with this special object in view.

The question of equipment caused great delay before authorization was given a number of excellent units. After the declaration of war, however, this difficulty disappeared, because funds were much more readily obtainable and because later, as soon as war appropriations for the Medical Department became available, the furnishing of equipment by the Red Cross was no longer required. Much embarrassment was caused by the desire of prominent or ambitious medical men to receive authority to organize a unit without the support of a parent institution. Such offers, although frequently backed by strong political and social influences and the offer of funds for equipment, were always refused.

SMALLER UNITS.

The reasonable and patriotic offers of medical institutions too small to be the parents of base hospitals were met by authorizing those who fulfilled all requirements to organize hospital units. These units were only one-half the size of base hospitals, but were intended for a service of 250 beds, with a staff of 12 medical officers and 20 nurses. They were intended either for the establishment of small hospitals, such as camp hospitals, or for the rapid expansion of base hospitals. They were found to be very valuable for both purposes in the service of the American Expeditionary Forces. They were designated by letters of the alphabet to prevent confusion with base hospitals. A less elaborate equipment was required for these small units than for the base hospitals.

AMBULANCE COMPANIES.

During this period the organization, training, and equipment of ambulance companies were rapidly and successfully pushed, this work being in the hands of an officer of the Medical Corps, who had been for several years on duty with the Red Cross and who had organized the Bureau of Medical Service. This service, besides organizing ambulance companies, was in charge of a great system of first-aid instruction, not only in connection with chapters, but with railroads, mines, and the large industrial concerns. Forty-five ambulance companies were organized,[5] which passed into the service of the United States, most of them being assigned to sanitary trains of the various divisions. A number of those earliest organized joined the camp established by the Surgeon General at Allentown, Pa., for the organization of ambulance sections for service with the French Army, and later saw service in France with the United States Ambulance Service with the French Army.

DECLARATION OF WAR.

When war was declared 33 base hospitals had been authorized[6] and their organization was well under way, and 14 more were authorized by July 26.[7] The total number which the American Red Cross had been authorized to form had been limited to 50 by the War Department, upon the recommendation of the General Staff, and this number was probably not far short of the number of medical schools and hospitals in the United States which were qualified in size and other respects to become suitable parent institutions.

PERSONNEL.

Another difficulty, besides the question of equipment, which was removed by the declaration of war, and even more promptly, was the securing of adminstrative personnel. This personnel in its Red Cross enrollment had to be pledged to enlist in case of war in the Enlisted Medical Reserve Corps and the number so enlisting in time of peace was required to be one-third of that authorized at war strength. It was with the greatest difficulty that even this comparatively small number could be secured in time of peace, but under the stimulus of patriotism and the prospect of immediate active service, the complement was readily made up as soon as war was declared.

Many of the units, when war came, were complete as regards their Red Cross enrollment, but not ready to be called into active service because of delays in the issue of commissions to their officers. It had been clearly understood between the directors of the units, the director general, and the Surgeon General that these units, being organized for service in war, the officers of the Medical Reserve Corps composing their staffs would not be called into active service to meet the needs of the service in time of peace.[8] This was a matter of much concern, not only to the individual officers but to the teaching faculties and hospital authorities, who were naturally unwilling to be exposed to such disruptions except to meet the great emergency of war. But there was at this time no special subdivision of the Surgeon General's Office charged with the administration of the affairs of the Medical Reserve Corps, and the names of these attached to units were thrown into the general file instead of being kept separate. This led to frequent violations of the agreement, to which was added the fact that the chief surgeon of the Eastern Department found in the officers of these units a convenient supply of highly efficient men to meet temporary needs in his department. This produced much dissatisfaction, especially for commissions in the Medical Reserve Corps, on the part of many members of the staffs of base hospitals, although already enrolled with the Red Cross. It was thought by all of the parties concerned that this postponement was not important because these commissions could be issued promptly when the need appeared. Experience, however, later demonstrated the error of this assumption. When diplomatic relations were broken off with Germany, efforts were made to push these commissions through, but the War Department was suddenly subjected to great expansion and an enormous pressure of work which broke down the old clerical force from overwork and produced a period of much confusion. Great delays and many errors resulted, which added greatly to the difficulties of mobilizing the first units called into the military service.

HOSPITALS TO BRITISH ARMY.

Great Britain at the beginning of the war had failed to take steps to conserve her supply of medical men, and had placed no restrictions on the employment in the line of medical practitioners and students, and so, by the spring of 1917, was confronted by a shortage of medical officers. On April 27 the British medical liaison officer, then stationed in Washington, requested that the British medical service be furnished six base hospitals and 116 other medical officers.[9] He expected to have to go through the slow and difficult procedure of organization ab initio, and was much surprised and pleased to find that completed units were available, with selected personnel from the best medical centers in the country. There was great competition to be chosen because it was felt that these units were regarded as representatives of the medical and nursing professions of the United States, and especially because they were the first Army units to take our flag across the sea. Each was given a commanding officer and an adjutant, picked men from the regular Medical Corps, and a quartermaster furnished by the Quartermaster Department. The following were the six units selected:

Base Hospital No. 2, from the Presbyterian Hospital, New York City; director, Maj. George E. Brewer, M. C.

Base Hospital No. 4, from Lakeside Hospital, Cleveland; director, Maj. George W. Crile, M. C. This unit was the first to go; it sailed two weeks after receiving the order.

Base Hospital No. 5, from Harvard University; director, Maj. Harvey Cushing, M. C.

Base Hospital No. 10, from Pennsylvania Hospital, Philadelphia; director, Maj. R. H. Harte, M. C.

Base Hospital No. 12, from the Northwestern University, Chicago; director, Maj. F. A. Besley, M. C.

Base Hospital No. 21, from Washington University, St. Louis; director, Maj. Fred. T. Murphy, M. C.

As no uniform or individual equipment or mess outfit had been procurable for the personnel until they should be called into active service, this had to be obtained in great haste, and for at least one unit their uniforms were issued to the men on shipboard, after the unit had sailed. As, too, the directors were quite ignorant of the procedures necessary to obtain these supplies and of the numerous other things that had to be done upon the induction of their units into the Army and into active service—a task in that time of turmoil not easy for even veteran officers—they had to await the arrival of the regular administrative officers before progress could be made. Base Hospital No. 4, helped by its mobilization of six months before, was the first to be ready, and sailed on May 5,[10] landing safely in England on May 17. It was followed by Base Hospital No. 5, on May 11,[11] and by Base Hospital No. 2, on May 12.[12] The remaining units followed rapidly. Base Hospital No. 12 returned to port on May 21 [13] because of a singular accident in the firing of one of the guns on deck, by which a metal disk, which separated the powder charge from the shell, struck a wave at such an angle as to cause it to make a parabolic curve back to the deck, where it struck a stanchion and broke, the fragments killing two of the nurses and wounding a third.

DIRECTOR GENERAL RELIEVED.

Col. J. R. Kean, M. C., left the American Red Cross on July 15, 1917, for service in France. He was succeeded as director general of military relief by Mr. John D. Ryan, president of the Anaconda Copper Co. By this time the work of the Red Cross as an organizing agent for the medical departments of the military services was practically completed, except for the nursing service and the service in France, and it was left free to take up and extend its various welfare activities for the military services as a whole, and to carry assistance to other nations. At this time 46 of the 50 Red Cross base hospitals had been authorized and were either ready to be called into service or were in the course of organization. In July, 1917, it was decided to increase their capacity from 500 to 1,000 beds, which required the procurement of more personnel and additional equipment. Many of these units were not called into active service until the spring of 1918. All of them saw service abroad, except No. 16, organized from the staff of the German Hospital in New York, which, on account of the Teutonic origin of many of the members of its staff, was utilized for service at home.

VALUE OF RED CROSS HOSPITAL UNITS.

It is not too much to say that the Red Cross base hospital and hospital units constituted the backbone of the hospital service in France. The extent to which this is true is shown by the following facts. At the time when the Allies began the great offensive which resulted in the final defeat of the German armies on July 18, 1918, the American Army had 26 divisions in France. For the medical service of these, there were only 8 evacuation hospitals and 42 base hospitals, which latter had been organized as follows:[14]

By the Surgeon General's Office, from casual personnel	4
By the chief surgeon, American Expeditionary Force, from casual personnel	2
By the Red Cross, from parent institutions	36

The Red Cross base hospitals furnished to the service a large proportion of the consultants and specialists. The deficiency in evacuation hospitals made a critical situation, which was met by stripping these base hospitals of their best operating surgeons and nurses to form operating teams for the rapid expansion of the evacuation hospitals. This occurred at the very time when the base hospitals were undergoing an enormous expansion and were receiving a multitude of wounded. That this could be done without a breakdown is sufficient evidence of the self-devotion and patriotic spirit of these admirable organizations.

Army Red Cross base hospitals.

No.	Parent institution.	Home location.	Location in American Expeditionary Forces.[15]
1	Bellevue Hospital	New York City	Vichy, Allier.
2	Presbyterian Hospital	do	Etretat, Seine Inferieure.
3	Mount Sinai Hospital	do	Vauclaire, Dordogne.
4	Lakeside Hospital	Cleveland, Ohio	Rouen, Seine Inferieure.
5	Harvard University	Boston, Mass	Boulogne sur Mer, Pas de Calais.
6	Massachusetts General Hospital	do	Bordeaux, Gironde.
7	Boston City Hospital	do	Joue les Tours, Indre et Loire.
8	New York Post Graduate Hospital	New York City	Savenay, Loire Inferieure.
9	New York Hospital	do	Chateauroux, Indre.
10	Pennsylvania	Philadelphia, Pa	Treport, Seine Inferieure.
11	St. Joseph, St. Mary and Augustana Hospital	Chicago, Ill	Nantes, Loire Inferieure.
12	Northwestern University Medical School	do	Camiers, Seine Inferieure.
13	Presbyterian and County Hospital	do	Limoges, Haute Vienne.
14	St. Luke-Michael Reese Hospital	do	Mars, Nievre.
15	Roosevelt Hospital	New York City	Chaumont, Haute Marne.
16	German Hospital [a]	do	
17	Harper Hospital	Detroit, Mich	Dijon, Côte d'Or.
18	Johns Hopkins Hospital	Baltimore, Md	Bazoilles sur Meuse, Vosges.
19	Rochester General Hospital	Rochester, N. Y	Vichy, Allier.
20	University of Pennsylvania Hospital	Philadelphia, Pa	Chatel Guyon Puy de Dome.
21	Washington University Medical School	St. Louis, Mo	Rouen, Seine Inferieure.
22	Milwaukee County Hospital	Milwaukee, Wis	Beau Desert, Gironde.
23	Buffalo General Hospital	Buffalo, N. Y	Vittel, Vosges.
24	Tulane University	New Orleans, La	Limoges, Haute Vienne.
25	Cincinnati General Hospital	Cincinnati, Ohio	Allerey, Saone et Loire.
26	State Universty of Minnesota	Minneapolis, Minn	Do.
27	University of Pittsburgh Medical School	Pittsburgh, Pa	Angers, Maine et Loire.
28	Christian Church Hospital	Kansas City, Mo	Limoges, Haute, Vienne.
29	University of Denver Medical School	Denver, Colo	Tottenham, England.
30	University of California	San Francisco, Calif	Royat, Puy de Dome.
31	Youngstown Hospital	Youngstown, Ohio	Contrexeville, Vosges.
32	City Hospital	Indianapolis, Ind	Do.
33	Albany Hospital and Medical College	Albany, N. Y	Portsmouth, England.
34	Episcopal Hospital	Philadelphia, Pa	Nantes, Loire Inferieure.
35	Good Samaritan Hospital	Los Angeles, Calif	Mars, Nievre.
36	College of Medicine	Detroit, Mich	Vittel, Vosges.
37	Kings County Hospital	Brooklyn, N. Y	Dartford, England.
38	Jefferson Medical School	Philadelphia, Pa	Nantes, Loire Inferieure.
39	Yale Mobile Unit, Yale University	New Haven, Conn	Changed to a Mobile Hospital.
40	Good Samaritan Hospital	Lexington, Ky	Salisbury Court, England.
41	University of Virginia	Charlottesville, Va	St. Denis-sur-Seine, Seine.
42	University of Maryland Medical School	Baltimore, Md	Bazoilles sur Meuse, Vosges.
43	Emory University	Atlanta, Ga	Blois, Loire et Cher.
44	Massachusetts Homeopathic Hospital	Boston, Mass	Pouques les Eaux, Nievre.
45	Medical College of Virginia	Richmond, Va	Toul, Meurthe et Moselle.
46	University of Oregon	Portland, Oreg	Bazoilles sur Meuse, Vosges.
47	San Francisco Hospital	San Francisco, Calif	Beaune, Cote d'Or.
48	Metropolitan Hospital	New York City	Mars sur Allier, Nievre.
49	State University	Omaha, Nebr	Allerey, Saone et Loire.
50	University of Washington	Seattle, Wash	Mesves, Nievre.

[a] Base Hospital No. 16, did not go abroad, but functioned at Biltmore, N. C.

Hospital units.

Designation.	Parent institution.	Home location.	Location in American Expiditionary Forces.
A	Presbyterian Hospital	Philadelphia, Pa	Joined Base Hospital 18 at Bazoilles sur Meuse, Vosges.
B	Westchester County Associated Hospitals.	Yonkers, N. Y	Joined Base Hospital 23 at Vittel, Vosges.
C	No parent institution	Spokane, Wash	Camp Hospital 4 at Joineville-Seine.
D	Louisville City Hospital	Louisville, Ky	Joined Base Hospital 1 at Vichy, Allier.
F	Harlem Hospital	New York City	Joined Base Hospital 8 at Savenay, Loire Inferieure.
G	Syracuse University Medical College.	Syracuse, N. Y	Joined Base Hospital 31 at Contrexville, Vosges.
H	Fordham Hospital	New York City	Camp Hospital 24 at Langres, Haute Marne.
I	St. John's Hospital	Anderson, Ind	Joined Base Hospital 53 at Langres, Haute Marne.
K	No parent institution	Council Bluffs, Iowa	Camp Hospital 27 at Tours.
L	Allegheny General Hospital	Pittsburgh, Pa	Camp Hospital 21 at Bourbonne-les-Bains, Haute Marne.
N	Flower Hospital	New York City	Joined Base Hospital 5 at Boulogne-Sur Mer (Pas. de Calais).
O	No parent institution	Charlotte, N. C	Joined Base Hospital 6 at Bordeaux, Gironde.
P	Memphis General Hospital	Memphis, Tenn	Joined Base Hospital 15, Chaumont, Haute Marne.
Q	Butterworth-Blodgett University	Grand Rapids, Mich	Camp Hospital 40 at Liverpool and Base Hospital 208, Autun, Saone et Loire.
R	Jefferson County Hospital	Fairfield, Iowa	Joined Base Hospital 32 at Contrexville, Vosges.
S	Vanderbilt University	Nashville, Tenn	Camp Hospital 28 at Nevers, Nievre.
T	University of Arkansas	Little Rock, Ark	Salisbury County, England and Field Hospital Company No. 12, First Division.
V	Baylor University	Dallas, Tex	Joined Base Hospital 26 at Allerey, Saone et Loire.
W	St. John's Hospital	Springfield, Ill	Camp Hospital 40 at Liverpool, England.

Ambulance companies.[16]

[Organized under the American Red Cross by Maj. Robert U. Patterson, M. C.]

No.	Organization headquarters.	Post of duty.
1	Pasadena, Calif.	Camp Crane, Allentown, Pa.
2	University of California	Do.
3	University of Chicago	Do.
4	Cleveland, Ohio	Camp Sherman, Chillicothe, Ohio.
5	Washington, D. C.	Camp Crane, Allentown, Pa.
6	Fordham University	Do.
7	University of New York	Do.
8	Detroit, Mich.	Camp Custer, Battle Creek, Mich.
9	Chicago, Ill.	Camp Sherman, Chillicothe Ohio.
10	Columbia University	Camp Crane, Allentown, Pa.
11	Battle Creek, Mich.	Do.
12	University of Washington	Do.
13	Pittsfield, Mass.	Camp Devens, Ayer, Mass.
14	University of Oregon	Camp Lewis, American Lake, Wash.
15	Grand Rapids, Mich.	Camp Custer, Battle Creek, Mich.
16	Fredonia, Kans.	Camp Funston, Fort Riley, Kansas.
17	Boston, Mass.	Camp Crane, Allentown, Pa.
18	Indianapolis, Ind.	Camp Grant, Rockford, Ill.
19	Portland, Oreg.	Camp Lewis, American Lake, Wash.
20	Atlanta, Ga.	Camp Gordon, Georgia.
21	Flint, Mich.	Camp Custer, Battle Creek, Mich.
22	Charleston, W. Va.	Camp Meade, Maryland.
23	Portland, Me.	Camp Crane, Allentown, Pa.
24	Kansas City, Mo.	Camp Funston, Fort Riley, Kansas.
25	Rutland, Vt.	Disbanded.
26	Columbia, S. C.	Camp Crane, Allentown, Pa.
27	Salt Lake City, Utah	Camp Lewis, American Lake, Wash.
28	Detroit, Mich.	Fort Benjamin Harrison, Indiana.
29	Atlanta, Ga.	Fort McPherson, Georgia.
30	Denver, Colo.	Camp Funston, Fort Riley, Kansas.
31	Greensboro, N. C.	Fort Oglethorpe, Georgia.
32	Greenville, S. C.	Camp Jackson, Columbia, S. C.
33	Summit, N. J.	Syracuse, N. Y.
34	Hudson County, N. J.	Camp Dix, Wrightstown, N. J.
35	Omaha, Nebr.	Camp Dodge, Des Moines, Iowa.
36	Houston, Tex.	Fort Sam Houston, Tex.
37	Minneapolis, Minn.	Camp Grant, Rockford, Ill.
38	San Antonio, Tex.	Texas National Guard.
39	Vicksburg, Miss.	Camp Pike, Little Rock, Ark.
40	Fort Worth, Tex.	Fort Sam Houston, Texas.
41	Lock Haven, Pa.	Camp Meade, Maryland.
42	State of Michigan	Camp Custer, Battle Creek, Mich.
43	Raleigh, N. C.	Camp Lee, Petersburg, Va.
44	Topeka, Kans.	Camp Funston, Fort Riley, Kansas.
45	Memphis, Mich.	Camp Taylor, Louisville, Ky.
46	Richmond, Va.	Camp Lee, Petersburg, Va.

Organization of Red Cross base hospitals for the Army.

[Minimum peace strength for enrollment, 1916.[17]]

Red Cross base hospital—Army.	Officers.	Nurses.	Nurses' aides.	Male administrative personnel.	Civilian employees.
Director	1				
Administrative division—Record section, adjutant:					
Correspondence—Records of personnel	1	3		5	2 stenographers.
Command of administrative personnel.					
Sick call for administrative personnel.					
Medical and surgical records.					
Admissions and discharges—Registrar	1			6	Do.
Reports of cases—Physical examination.					
Supply section, quartermaster—					
Property, medical, quartermaster, ordnance, signal—Transportation.	1			10	1 stenographer.
Buildings—Subsistence section, quartermaster—					
Purchase and issue of food				4	Do.
Kitchen, main				8	1 chief cook.
Dining room				8	1 baker.
Officers' mess				2	1 cook.
Diet kitchen		2	4	2	
Nurses' mess under chief nurse				2	2 cooks, 4 maids.
Linen room		1	6		
Professional division:					
Wards		38	15	20	
Surgical section, assistant director; others 8	9				
Operating room		6		2	
Medical section, assistant director; others 6	7				
Dispensary				4	
Laboratory section, assistant director; others 2	3			3	
Bacteriological, pathological, and X-ray laboratories					
Morgue					
Dental section—Dentists 2	2			2	
Chaplain	1			2	
Chapel, library					
	26	50	25	80	15

REFERENCES.

(1) Crile, G. W.: The Unit Plan of Organization of the Medical Reserve Corps, United States Army, for service in Base Hospitals. *Surgery, Genecology, and Obstetrics*, Chicago, 1916, xxii, 68.

(2) Letter from the Surgeon General to First Lieut. Lewis A. Conner, M. R. C., New York, February 29, 1916. Subject: Formation of Red Cross Units. On file, Record Room, S. G. O., 155420-F (Old Files).

(3) Richards, T. W.: The Organization and Equipment of Navy Hospital Units. *United States Naval Med. Bull.*, Government Printing Office, Washington, D. C., 1918, xii, No. 2, 184.

(4) Letter from committee of medical profession appointed by joint action of the presidents of five national medical bodies to the President of the United States, April 26, 1916. Subject: Offer of Services toward the Medical Welfare of the Army and Navy. On file, Record Room, S. G. O., 156772 (Old Files).

(5) Memo. for Colonel Munson, September 4, 1917. Subject: Red Cross Ambulance Companies. On file, Record Room, S. G. O., 171059 (Old Files).

(6) Memo. from Col. J. R. Kean, M. C., to the Surgeon General, April 4, 1917. Subject: Organization of Base Hospitals. On file, Record Room, S. G. O., 15542-117 B (Old Files).

(7) Mimeographed list of American Red Cross Army base hospitals, July 26, 1917, showing name and place of organization of 47 hospitals. On file, Record Room, S. G. O., 172158 (Old Files).

(8) Letter from Col. J. R. Kean, director general of military relief, American Red Cross, to Dr. N. E. Brill, director, Red Cross Base Hospital No. 3, New York, October 23, 1916. Subject: Duties and obligations of personnel. On file, Record Room, S. G. O., 155420-78 (Old Files).

(9) Letter from the Surgeon General to the Chief of Staff, May 1, 1917. Subject: Memo. by Col. T. H. Goodwin, Royal Army Medical Corps. On file, Record Room, S. G. O., 172158A (Old Files).

(10) Letter from Maj. Harry L. Gilchrist, M. C., to The Adjutant General, May 8, 1917. Subject: Departure of Base Hospital No 4. On file, Record Room, S. G. O., 159444 (Old Files).

(11) Summary of Troop Arrival Data of G–1, G. H. Q., On file, A. E. F. Record Section, Historical Division, Army War College.

(12) Telegram from Colonel Richards, Governors Island, to the Surgeon General, May 16, 1917. Subject: Personnel Base Hospital No. 2. On file, Record Room, S. G. O., 164987 (Old Files).

(13) Telegram from Maj. C. C. Collins to the Surgeon General, May 21, 1917. Subject: Accident on Board Ship. On file, Record Room, S. G. O., 165902 (Old Files).

(14) Hospitalization, A. E. F., Office of the Chief Surgeon, Hospitalization Division, 4th edition. On file, Record Room, S. G. O. (322.3 A. E. F.) Y.

(15) Hospitalization, A. E. F., Office of the Chief Surgeon, Hospitalization Division; 7th edition, November 1, 1918. On file, Record Room, S. G. O. (322.3 A. E. F.) Y.

(16) Shown on Reports of Organization. On file, Record Room, S. G. O., 322.0 (number of ambulance companies). A.

(17) Memorandum for Muster-In of Red Cross Base Hospital Units. From Director General of Military Relief, American Red Cross, July 14, 1916. On file, Record Room, S. G. O., 155420–59 (Old Files).

SECTION I.

RELATIONSHIPS OF THE MEDICAL DEPARTMENT WITHIN THE MILITARY ESTABLISHMENT.

In order to appreciate fully the manner of execution of the enormous task which devolved upon the Medical Department of the Army in the exercise of its functions during the World War, it is essential that one have a comprehensive conception of the military establishment, of which the Medical Department forms an integral part.

MILITARY ESTABLISHMENT.

The complex military machinery, broadly known as the Army of the United States, had the following constitution on April 6, 1917, when war was declared against Germany:[1]

I. *The Regular Army.*—(1) Troops (Infantry, Cavalry, Coast Artillery, etc.); (2) General Staff Corps; (3) Adjutant General's Department; (4) Inspector General's Department; (5) Judge Advocate General's Department; (6) Quartermaster Corps; (7) Medical Department; (8) Corps of Engineers; (9) Ordnance Department; (10) Signal Corps; (11) Bureau of Insular Affairs; (12) Militia Bureau; (13) Various groups representing detached officers, noncommissioned officers, chaplains, those on the retired list, etc.; (14) Regular Army Reserve.

II. *The Officers' Reserve Corps.*

III. *The Enlisted Reserve Corps.*

IV. *The Organized Militia* (while in the service of the United States).—(1) National Guard; (2) National Guard Reserve.

The functioning of the Regular Army at peace was effected by distributing its component forces among the territorial departments under the command of department commanders, each of whom was charged, under the direction of the War Department, with the duty of preparing for war all the troops and all the military resources of his department, and with the administration of all military affairs of his department, except as otherwise prescribed by Army Regulations or existing orders.[2]

Troops were not ordinarily grouped at large garrisons, but, with the idea of insuring complete continuity of function in peace and war, tactical divisions existed. Army Regulations provided that these tactical divisions, or portions of them, would be annually concentrated under the department commanders. The main purpose of these concentrations was that division commanders might secure for themselves and their division staffs as much practice as possible in the actual handling and supply of troops in the field.[2]

During the war period the following additional War Department bureaus were created, or were made independent of parent bureaus of which they formerly formed a part: Construction Division,[3] Air Service,[4] Chemical Warfare Service,[5] Motor Transport Corps,[6] Tank Corps,[7] and the Finance Service.[8]

GENERAL STAFF CORPS.

The General Staff Corps consisted of the Chief of Staff, the Assistant to the Chief of Staff, and other officers detailed to the General Staff Corps from various branches of the Army, not over half of whom could be stationed in or near the District of Columbia. This corps, under the Chief of Staff, was charged with the duty of investigating and reporting upon all questions affecting the efficiency of the Army and its state of preparation for military operations, the preparation of plans for the national defense and other details which would enhance the possibilities of the Nation successfully surviving conflict at home or abroad.[9] The command of the Army rested with the constitutional Commander in Chief, the President, whose command was exercised through the Secretary of War and the Chief of Staff.[10] The Chief of Staff reported to the Secretary of War, acted as his adviser, received from him directions and orders given in behalf of the President, and gave effect thereto. General Staff officers serving with troops were assigned to the general staff of a command in such numbers and grades as were recommended by the Chief of Staff. The senior General Staff officer on duty with the command was the chief of staff of the command unless otherwise directed by the War Department.[11]

The duties of the General Staff Corps were confined to supervising, coordinating, and informing powers connected with the operation of the Army as a whole.[12]

During the early months of preparation for war Congress passed enactments which gave the Chief of Staff of the Army rank and precedence over all other officers of the Army,[13] and removed the restriction on the proportionate number of the General Staff Corps in or near the District of Columbia.

To enable the Chief of Staff to exercise effectively his supervisory and coordinating powers in respect to overseas movements, there was created in his office, for the period of the war, a section to take charge of the embarkation of troops and supplies for trans-Atlantic transportation, and to exercise, under the Secretary of War, the direct control incident to this service.[14] This section was later transferred to the newly created section of the General Staff, the Storage and Traffic Service,[15] which functioned to provide for coordination of movement of troops and shipments of munitions and supplies of every kind during manufacture and after final assembling; necessary storage facilities on the seaboard and at interior points; the movement of raw materials and finished supplies from points of origin to each and every destination, including ports of embarkation; the supervision of ports of embarkation; the control of the employment of Army transports engaged in the trans-Atlantic service, as well as supplementary commercial ships; and arrangements for convoy service with the Navy. Chiefs of bureaus were directed to keep the Director of the Storage and Traffic Service fully informed on the condition of supplies in their several services by direct correspondence.

As a further developmental measure in the prosecution of the war, an additional section, the Purchasing Service of the General Staff, was created in January, 1918, which was charged with the acquisition, by purchase, of all supplies and munitions required for the use of the Army.[16]

These newer sections, instituted for the emergency, were incorporated in the reorganized General Staff, effected on February 9, 1918, the plan of which provided for five main divisions,[17] each under an officer who was given full power to act for the Secretary of War and the Chief of Staff upon all matters charged to his division. The divisions were: Executive, War Plans, Purchase and Supply, Storage and Traffic, and Army Operations.

To coordinate the activities of all the divisions of the General Staff and the several bureaus, corps, and other agencies of the War Department, to prevent duplication of work and to eliminate all unnecessary machinery or organization, the Coordination Section of the General Staff was created in the office of the executive Assistant of the Chief of Staff.[18]

A rearrangement of the separate divisions of the General Staff was subsequently effected, providing for the following divisions: Military Intelligence, War Plans, Army Operations, Purchase, Storage and Traffic.[19] The executive Assistant to the Chief of Staff was placed in charge of the office of the Chief of Staff, and had cognizance and control of the organization, administration, and methods of all the divisions of the General Staff and several bureaus, corps, and other agencies of the War Department for coordination, prevention of duplication of work, securing harmonious action, and the elimination of unnecessary machinery of organization.

The delegated administrative powers of these various divisions of the General Staff, in so far as they directly concerned the Medical Department, were as follows:[19]

WAR PLANS DIVISION.

Plans for the organization of all branches of the Army and the preparation of Tables of Organization; proposed legislation and the preparation of regulations and rules for the Military Establishment; training; inspection to insure efficiency and thoroughness in training and instruction.

ARMY OPERATIONS DIVISION.

Reconstruction and mobilization, including the assignment and distribution of the draft; the personnel of troops, their movement and disposition; the determination of overseas priority; appointment, promotion, and assignment of the commissioned personnel of all branches of the Army; camp sites, cantonments, Army posts, hospitals, construction, plans, and projects for all branches of the Army except for harbor terminal facilities; the determination and distribution of all types and quantities of equipment and supplies of all branches of the Army, together with regulations concerning them; and the design, production, procurement, reception, storage, maintenance, and replacement of all motor vehicles.

PURCHASE, STORAGE, AND TRAFFIC DIVISION.

The supervision and direction of all requirements and the procurement and production activities, including real estate, of the several bureaus, corps, and other agencies of the War Department; the coordination and correlation of the requirements of the procurements and production activities of the several bureaus; representation of the Army in all arrangements for coordinating requirements, procurement, and production activities in the several bureaus with other agencies of the Government and with the Allies; the determination of purchasing and manufacturing priorities; the supervision and coordination of all fiscal accounting systems and appropriations, estimates, and requirements and other financial matters relating to the purchase of all supplies; the storing of all property; all that pertained to transportation, inland and coastwise, of troops and property; the transportation of troops and supplies overseas; embarkation and overseas service relating to the Army program, including the employment of all Army transports; supplemental commercial shipping, including arrangements with the Navy Department for convoy service; providing ports of embarkation, expeditionary ports and concentration camps in connection therewith; courier service between the War Department and General Headquarters, American Expeditionary Force.

BUREAUS OF THE WAR DEPARTMENT.

The War Department is the administrative branch of the Military Establishment, which is presided over by the Secretary of War, and which embraces, in addition to the General Staff Corps, the various bureaus whose chiefs normally supervise and control the departments they represent.[20] The bureau chiefs are stationed in Washington and are the advisers of the Secretary of War and the Chief of Staff on all matters connected with the operations of their respective departments or corps throughout the entire Military Establishment. They are kept sufficiently informed of the plans for the field forces to enable them intelligently to recommend adequate steps to insure the successful execution of these plans, in so far as their respective branches of the service are concerned. Normally, also, they control directly and are responsible for the efficient operation of the general depots of supply, general hospitals, arsenals, and other activities for which they are responsible. They are charged with the accumulation of the necessary supplies and with forwarding the same, in accordance with Army Regulations, to the point where they come under the control of the department commander,[a] the commander of the field forces, concentration camps, etc. They formulate estimates for the necessary appropriations to effectually carry on the operations of their respective departments.

The bureaus of the War Department whose activities materially concern those of the Medical Department and its chief, the Surgeon General, and which, therefore, need be considered here for purposes of orientation, are: The Adjutant General's Department, Inspector General's Department, Judge Advocate General's Department, the Quartermaster Corps, the Corps of Engineers, the Ordnance Department, and the Signal Corps. The chiefs of these bureaus, as has been stated above, act as technical advisers to the Secretary of War and the Chief of Staff, and are concerned, therefore, in the administration of the Army. The relationship of the Medical Department to the Commander in Chief of the Army, to the Secretary of War, to the General Staff, to the other bureaus of the War Department, and to the activities of the Army without the War Department, just before the declaration of war and at the height of the war activities, is depicted in Plates I, II, and III.

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[a] September 1, 1920, the territorial departments embracing the continental area of the United States were superseded by corps areas. (General Orders, No. 50, W. D., August 20, 1920.)

RELATIONSHIPS OF THE MEDICAL DEPARTMENT PRIOR TO THE WORLD WAR

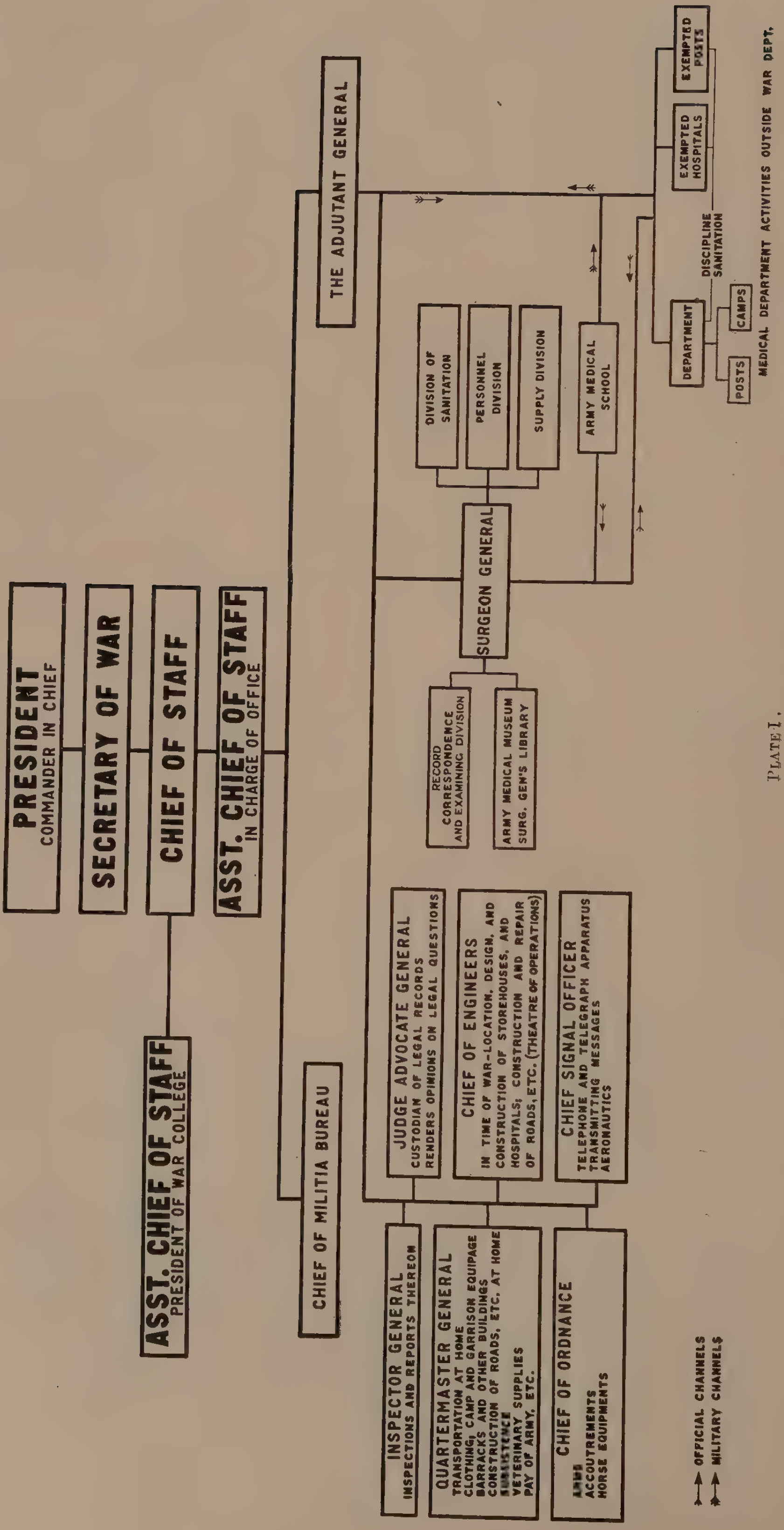
PRESIDENT
COMMANDER IN CHIEF
SECRETARY OF WAR
CHIEF OF STAFF
ASST. CHIEF OF STAFF
IN CHARGE OF OFFICE
ASST. CHIEF OF STAFF
PRESIDENT OF WAR COLLEGE
CHIEF OF MILITIA BUREAU
THE ADJUTANT GENERAL
JUDGE ADVOCATE GENERAL
CUSTODIAN OF LEGAL RECORDS
RENDERS OPINIONS ON LEGAL QUESTIONS
CHIEF OF ENGINEERS
IN TIME OF WAR-LOCATION, DESIGN, AND CONSTRUCTION OF STOREHOUSES, AND HOSPITALS; CONSTRUCTION AND REPAIR OF ROADS, ETC. (THEATRE OF OPERATIONS)
CHIEF SIGNAL OFFICER
TELEPHONE AND TELEGRAPH APPARATUS
TRANSMITTING MESSAGES
AERONAUTICS
INSPECTOR GENERAL
INSPECTIONS AND REPORTS THEREON
QUARTERMASTER GENERAL
TRANSPORTATION AT HOME
CLOTHING, CAMP AND GARRISON EQUIPAGE
BARRACKS AND OTHER BUILDINGS
CONSTRUCTION OF ROADS, ETC. AT HOME
SUBSISTENCE
VETERINARY SUPPLIES
PAY OF ARMY, ETC.
CHIEF OF ORDNANCE
ARMS
ACCOUTREMENTS
HORSE EQUIPMENTS
RECORD CORRESPONDENCE AND EXAMINING DIVISION
ARMY MEDICAL MUSEUM
SURG. GEN'S LIBRARY
SURGEON GENERAL
DIVISION OF SANITATION
PERSONNEL DIVISION
SUPPLY DIVISION
ARMY MEDICAL SCHOOL
DEPARTMENT
POSTS
CAMPS
DISCIPLINE
SANITATION
EXEMPTED HOSPITALS
EXEMPTED POSTS
MEDICAL DEPARTMENT ACTIVITIES OUTSIDE WAR DEPT.
OFFICIAL CHANNELS
MILITARY CHANNELS

PLATE I.

RELATIONSHIPS OF THE MEDICAL DEPARTMENT
PERIOD OF THE WORLD WAR

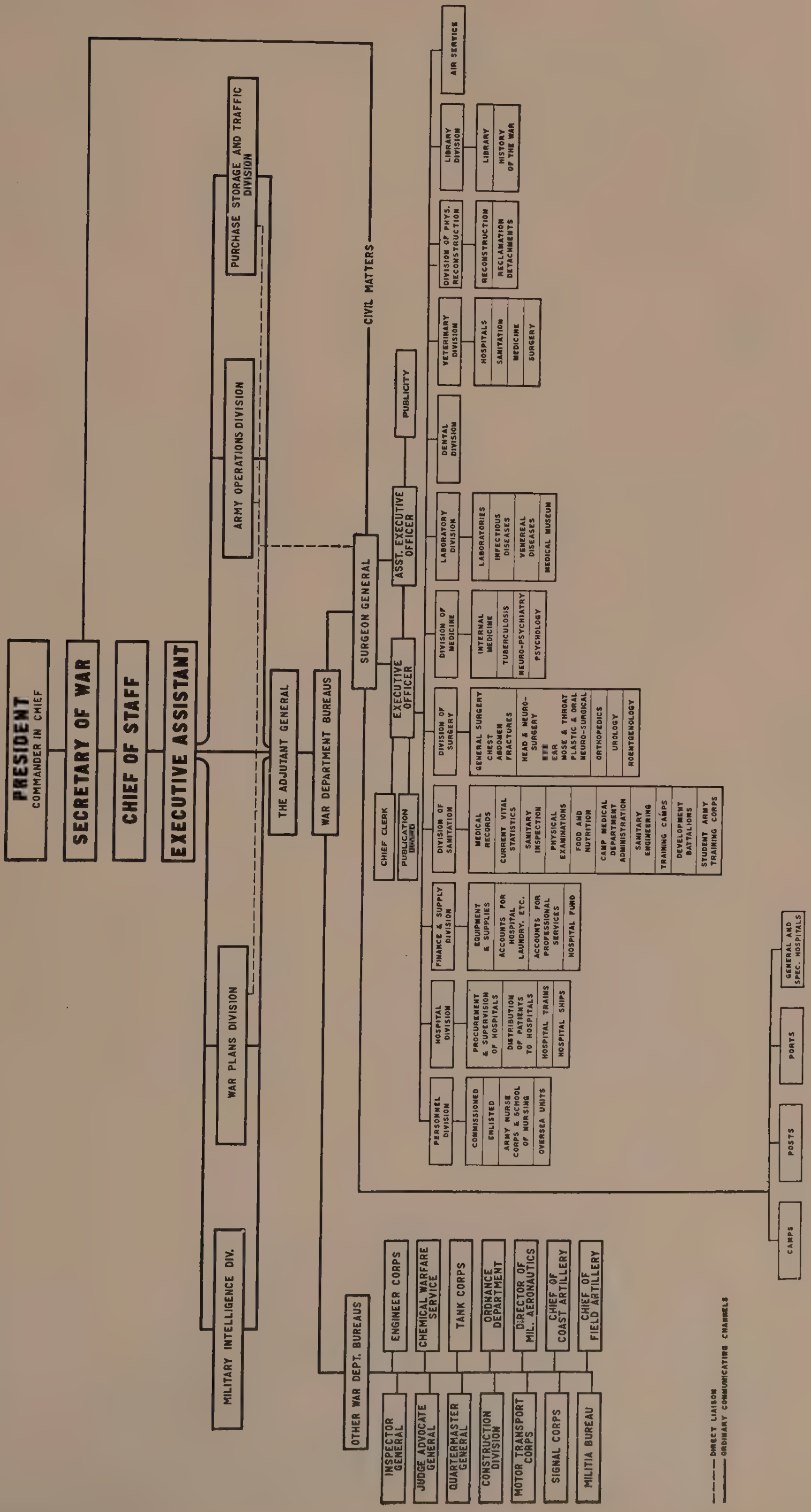
PRESIDENT
COMMANDER IN CHIEF
SECRETARY OF WAR
CHIEF OF STAFF
EXECUTIVE ASSISTANT
THE ADJUTANT GENERAL
WAR DEPARTMENT BUREAUS
PURCHASE STORAGE AND TRAFFIC DIVISION
ARMY OPERATIONS DIVISION
WAR PLANS DIVISION
MILITARY INTELLIGENCE DIV.
CIVIL MATTERS
SURGEON GENERAL
EXECUTIVE OFFICER
ASST. EXECUTIVE OFFICER
PUBLICITY
CHIEF CLERK
PUBLICATION BOARD
PERSONNEL DIVISION
COMMISSIONED
ENLISTED
ARMY NURSE CORPS & SCHOOL OF NURSING
OVERSEA UNITS
HOSPITAL DIVISION
PROCUREMENT & SUPERVISION OF HOSPITALS
DISTRIBUTION OF PATIENTS TO HOSPITALS
HOSPITAL TRAINS
HOSPITAL SHIPS
FINANCE & SUPPLY DIVISION
EQUIPMENT & SUPPLIES
ACCOUNTS FOR HOSPITAL LAUNDRY, ETC.
ACCOUNTS FOR PROFESSIONAL SERVICES
HOSPITAL FUND
DIVISION OF SANITATION
MEDICAL RECORDS
CURRENT VITAL STATISTICS
SANITARY INSPECTION
PHYSICAL EXAMINATIONS
FOOD AND NUTRITION
CAMP MEDICAL DEPARTMENT ADMINISTRATION
SANITARY ENGINEERING
TRAINING CAMPS
DEVELOPMENT BATTALIONS
STUDENT ARMY TRAINING CORPS
DIVISION OF SURGERY
GENERAL SURGERY
CHEST
ABDOMEN
FRACTURES
HEAD & NEURO-SURGERY
EYE
EAR
NOSE & THROAT
PLASTIC & ORAL
NEURO-SURGICAL
ORTHOPEDICS
UROLOGY
ROENTGENOLOGY
DIVISION OF MEDICINE
INTERNAL MEDICINE
TUBERCULOSIS
NEURO-PSYCHIATRY
PSYCHOLOGY
LABORATORY DIVISION
LABORATORIES
INFECTIOUS DISEASES
VENEREAL DISEASES
MEDICAL MUSEUM
DENTAL DIVISION
VETERINARY DIVISION
HOSPITALS
SANITATION
MEDICINE
SURGERY
DIVISION OF PHYS. RECONSTRUCTION
RECONSTRUCTION
RECLAMATION DETACHMENTS
LIBRARY DIVISION
LIBRARY
HISTORY OF THE WAR
AIR SERVICE
CAMPS
POSTS
PORTS
GENERAL AND SPEC. HOSPITALS
OTHER WAR DEPT. BUREAUS
ENGINEER CORPS
CHEMICAL WARFARE SERVICE
TANK CORPS
ORDNANCE DEPARTMENT
DIRECTOR OF MIL. AERONAUTICS
CHIEF OF COAST ARTILLERY
CHIEF OF FIELD ARTILLERY
INSPECTOR GENERAL
JUDGE ADVOCATE GENERAL
QUARTERMASTER GENERAL
CONSTRUCTION DIVISION
MOTOR TRANSPORT CORPS
SIGNAL CORPS
MILITIA BUREAU
DIRECT LIAISON
ORDINARY COMMUNICATING CHANNELS

PLATE II.

RELATIONSHIPS OF THE MEDICAL DEPARTMENT
SOURCES AND DISTRIBUTION OF PERSONNEL, MATERIALS AND SUPPLIES - FUNCTIONS
PERIOD OF THE WORLD WAR

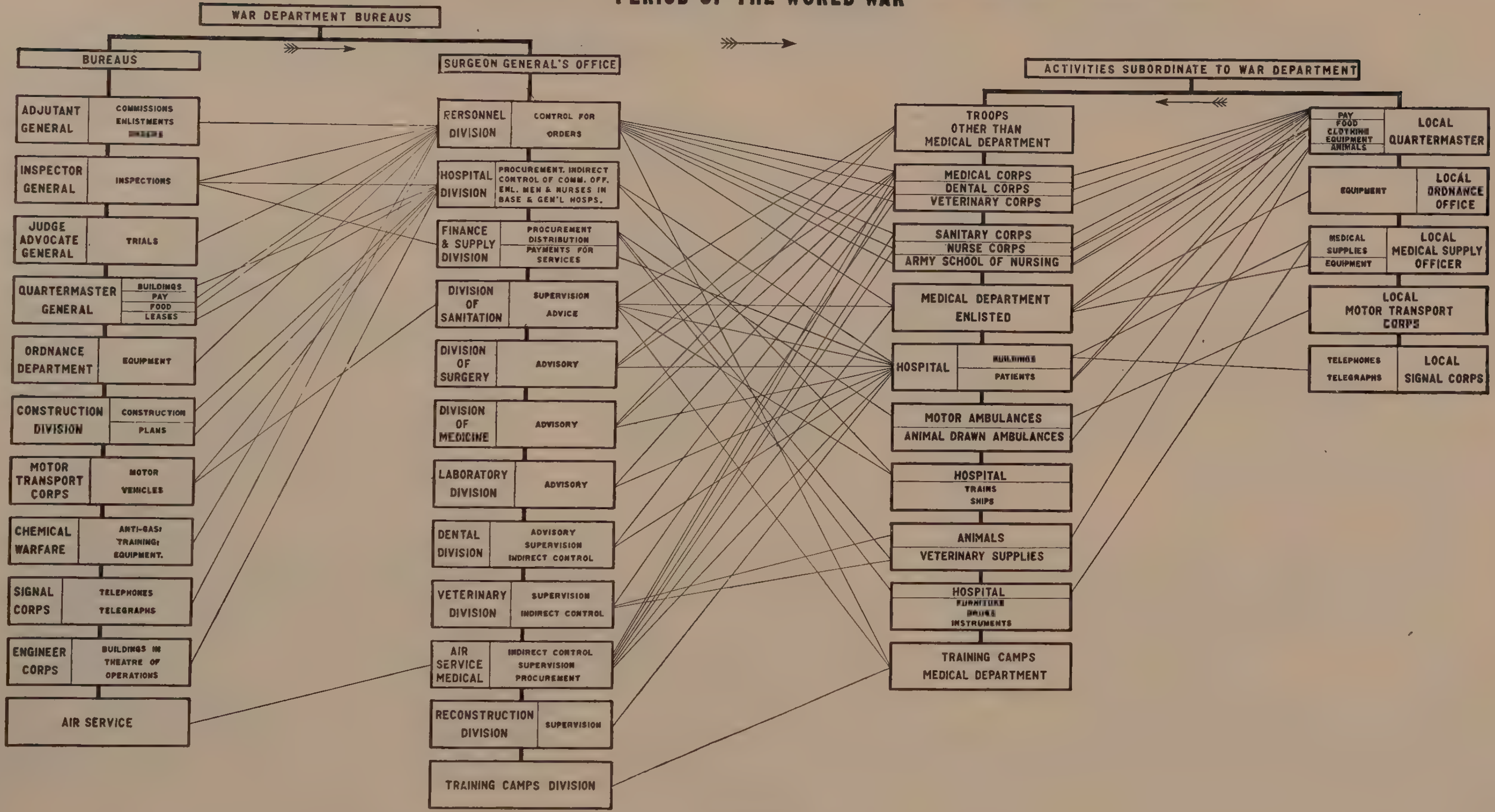
WAR DEPARTMENT BUREAUS
BUREAUS
ADJUTANT GENERAL
COMMISSIONS
ENLISTMENTS
INSPECTOR GENERAL
INSPECTIONS
JUDGE ADVOCATE GENERAL
TRIALS
QUARTERMASTER GENERAL
BUILDINGS
PAY
FOOD
LEASES
ORDNANCE DEPARTMENT
EQUIPMENT
CONSTRUCTION DIVISION
CONSTRUCTION
PLANS
MOTOR TRANSPORT CORPS
MOTOR VEHICLES
CHEMICAL WARFARE
ANTI-GAS: TRAINING: EQUIPMENT.
SIGNAL CORPS
TELEPHONES
TELEGRAPHS
ENGINEER CORPS
BUILDINGS IN THEATRE OF OPERATIONS
AIR SERVICE
SURGEON GENERAL'S OFFICE
PERSONNEL DIVISION
CONTROL FOR ORDERS
HOSPITAL DIVISION
PROCUREMENT. INDIRECT CONTROL OF COMM. OFF. ENL. MEN & NURSES IN BASE & GEN'L HOSPS.
FINANCE & SUPPLY DIVISION
PROCUREMENT
DISTRIBUTION
PAYMENTS FOR SERVICES
DIVISION OF SANITATION
SUPERVISION
ADVICE
DIVISION OF SURGERY
ADVISORY
DIVISION OF MEDICINE
ADVISORY
LABORATORY DIVISION
ADVISORY
DENTAL DIVISION
ADVISORY
SUPERVISION
INDIRECT CONTROL
VETERINARY DIVISION
SUPERVISION
INDIRECT CONTROL
AIR SERVICE MEDICAL
INDIRECT CONTROL
SUPERVISION
PROCUREMENT
RECONSTRUCTION DIVISION
SUPERVISION
TRAINING CAMPS DIVISION
TROOPS OTHER THAN MEDICAL DEPARTMENT
MEDICAL CORPS
DENTAL CORPS
VETERINARY CORPS
SANITARY CORPS
NURSE CORPS
ARMY SCHOOL OF NURSING
MEDICAL DEPARTMENT ENLISTED
HOSPITAL
BUILDINGS
PATIENTS
MOTOR AMBULANCES
ANIMAL DRAWN AMBULANCES
HOSPITAL
TRAINS
SHIPS
ANIMALS
VETERINARY SUPPLIES
HOSPITAL
FURNITURE
DRUGS
INSTRUMENTS
TRAINING CAMPS MEDICAL DEPARTMENT
ACTIVITIES SUBORDINATE TO WAR DEPARTMENT
PAY
FOOD
CLOTHING
EQUIPMENT
ANIMALS
LOCAL QUARTERMASTER
EQUIPMENT
LOCAL ORDNANCE OFFICE
MEDICAL SUPPLIES
EQUIPMENT
LOCAL MEDICAL SUPPLY OFFICER
LOCAL MOTOR TRANSPORT CORPS
TELEPHONES
TELEGRAPHS
LOCAL SIGNAL CORPS

PLATE III.

1. May 4, 1917. The development and production of gas masks were made a function of the Medical Department (3rd Indorsement, A. G. O., to Surgeon General, May 4, 1917). In July, 1918, the transfer of these activities was made to the Chemical Warfare Service (G. O. No. 62, W. D., June 28, 1918).

2. August 22, 1917. Veterinary supplies were turned over by Quartermaster to Medical Department (G. O. No. 113, W. D., August 22, 1917).

3. March 13, 1918. The Construction Division was organized, taking over plans and construction from the Quartermaster Department (Annual Report of the Chief of Construction Division, 1918).

4. August 31, 1918. Supply of motor ambulances turned over to Motor Transport Corps (G. O. No. 75, W. D., August 15, 1918).

5. November 15, 1918. Procurement and distribution of supplies and finance and accounting activities turned over to Director, Purchase, Storage and Traffic Division, General Staff (Supply Circular No. 102, Purchase, Storage and Traffic Division, General Staff, October 24, 1918).

During the war the functioning of the War Department bureaus was gradually restricted by administrative activities assumed by the General Staff in order that the Army program for prosecuting our part of the war could be speedily and efficiently effected. How many of these administrative activities were taken over by the General Staff has been set forth in the preceding pages descriptive of the General Staff organization.

The normal functions of the War Department bureaus with which the Medical Department had close interrelations are outlined below, together with the modifications superimposed by war's necessities.

THE ADJUTANT GENERAL'S DEPARTMENT.

This bureau, known within the War Department as The Adjutant General's Office, or the "A. G. O.," is the department of records, orders, and correspondence of the Army and the militia.[21] Under the direction of the Secretary of War, and subject to the supervision of the Chief of Staff, in all matters pertaining to the command, discipline, or administration of the existing Military Establishment, The Adjutant General is charged with the following duties which have pertinence to the Medical Department: Recording, authenticating, and communicating to troops and individuals in the military service, all orders, instructions, and regulations issued by the Secretary of War through the Chief of Staff; preparing and distributing commissions; compiling and issuing the Official Army Register and the Army List and Directory; consolidating the general returns of the Army, arranging and preserving the reports of officers detailed to visit encampments of militia, of preparing the annual returns of the militia required by law to be submitted to Congress; managing the recruiting service; recording and issuing orders from the War Department. Under the Secretary of War, The Adjutant General is vested by law with charge of the historical records and business of the permanent Military Establishment, including all pensions, pay, bounty, and other business pertaining to or based upon the military or medical histories of former officers or enlisted men.

The archives of The Adjutant General's Office include all military records of the Revolutionary War; the records of all organizations, officers, and enlisted men who have been in the military service of the United States since the Revolutionary War; the records of the movements and operations of troops; the medical and hospital records of the Army; all reports of physical examination of recruits and all identification cards.

During the World War there were certain changes in the functions of The Adjutant General's Office. The Army Operations Division of the General Staff was given control of the recruitment and the mobilization of the Army, including the assignment and distribution of the draft; the personnel of troops; the movement and disposition of troops; the appointment, promotion, transfer, and assignment of the commissioned personnel of all branches of the Army.[22] A Commissioned Personnel Branch, Operations Division, General Staff, was also created, which was a consolidation of the Commissioned Personnel Section, General Staff, and the committee on classification of personnel of The Adjutant General's Office.[23] All staff corps and departments submitted requisitions to the Operations Division, General Staff, for the number and kind of officers needed for any particular organization or duty.

As previously stated, all official documents referred to or from the War Department, normally passed through the War Department office of record, The Adjutant General's Office, but during the war this requirement was modified, to economize in time, and the chiefs of the several bureaus, corps, and other agencies of the War Department were authorized to communicate directly with the directors of the several divisions of the General Staff or chiefs of branches of those divisions on matters over which the latter had control.[24]

THE INSPECTOR GENERAL'S DEPARTMENT.

Every branch of military affairs, except when specially limited by regulations or orders, comes within the sphere of inquiry of the Inspector General's Department.[25] Inspector generals and acting inspector generals exercise a comprehensive and general observation within the command to which they may be respectively assigned over all that pertains to the efficiency of the Army, the condition and state of supplies of all kinds, of arms and equipments, of the expenditure of public property and moneys, and the condition of accounts of all disbursing officers of every branch of the service, of the conduct, discipline and efficiency of officers and troops, and report with strict impartiality in regard to all irregularities that may be discovered. From time to time they make such suggestions as may appear to them practicable for the correction of any defect that may come under their observation. Inspector generals or acting inspector generals assigned to a military command are under the immediate direction of its commanding general; when not so assigned, they are under the orders of the War Department. They make the garrison and such special inspections as the commanding general may direct within the limits of his command. The chief of this bureau, in addition to administering his department, makes inspections, from time to time, of the different activities of the military establishment.

During the war, tactical inspections were made from time to time by members of the Training and Instruction Branch of the General Staff as the Chief of Staff directed.[26] These inspections were made with a view of securing uniformity in instruction and adherence to proper training methods and to insure progress in the training of divisions. In addition, the chiefs of the War Department bureaus were authorized to direct inspections of the troops of their branches.[26]

JUDGE ADVOCATE GENERAL'S DEPARTMENT.

The Judge Advocate General is the custodian of the records of all general courts-martial, courts of inquiry, and military commissions, and of all papers relating to the title of lands under the control of the War Department, except the Washington Aqueduct and the public buildings and grounds in the District of Columbia.[27] The officers of this department render opinions upon legal questions when called upon by proper authority. Reports rendered by the Judge Advocate General of the Army upon cases received by him, which require the action of the President, are transmitted to The Adjutant General of the Army for record and for the consideration of the Secretary of War and the President. After final action by superior authority in such cases, all the papers are returned to The Adjutant General of the Army, who, before publishing the action taken, refers the papers to the Judge Advocate General for further scrutiny.

THE QUARTERMASTER CORPS.

Prior to the war the Quartermaster Corps was charged with the duty of providing means of transportation of every character except motorized ambulances (for the Medical Department), either under contract or in kind, which was needed in the movement of troops and material of war.[28] It furnished all public animals employed in the service of the Army, the forage consumed by them, wagons and all articles necessary for their use, and the horse equipment for the Quartermaster Corps. It furnished clothing, camp and garrison equipage, barracks, storehouses and other buildings; constructed and repaired roads, railways, bridges; built and chartered ships, boats, docks, and wharves needed for military purposes; supplied subsistence for enlisted men and others entitled thereto; supplied articles for authorized sales and issues; furnished lists of articles authorized to be kept for sale; gave instructions for procuring, distributing, issuing, selling, and accounting for all quartermaster and subsistence supplies; had charge of the supply and distribution of an accounting for funds for the payment of the Army and such other financial duties as were especially assigned to it; and attended to all matters connected with military operations which were not expressly assigned to some other bureau of the War Department. It transported to the place of issue and provided storehouses and other means of protection for the preservation of stores supplied for the Army by other departments.

In order to carry to prompt completion the vast building program incidental to the housing of the armies to be mobilized, it became necessary in May, 1917, to organize a special division of the Quartermaster General's Office, to which was given the name of Cantonment Division, and to which was assigned the work of construction of cantonments and camps.[29] A large number of additional projects caused the creation, on March 13, 1918, of the Construction Division of the Army, which absorbed the Cantonment Division and was separated from the office of the Quartermaster General.[3]

On April 18, 1918, a Motor Transport Service [30] was organized as part of the Quartermaster Corps. An assistant to the Quartermaster General was detailed to duty as chief of this service. This officer, under the direction of the Quartermaster General, had technical supervision of the Motor Transport Service, the functions of which were the supervision of the purchase and procurement of all motor-propelled vehicles except tanks, "caterpillars," and other artillery tractors; the maintenance and repair of motor vehicles of standard types; the technical supervision of all motor vehicles; the maintenance and operation of all motor repair shops and garages; and the maintenance of reserve vehicles. The Motor Transport Service was separated from the control of the Quartermaster General and became the Motor Transport Corps,[6] whose functions were somewhat similar to but broader than those of the Motor Transport Service. All existing contracts for motor vehicles, motor-vehicle equipment and supplies, maintaining, operating and repairing, purchases, and disbursements were all taken over by the chief of the Motor Transport Corps, which in effect removed from the Medical Department direct control of motor ambulances.

On May 15, 1918, the Water Transport Branch of the Quartermaster General's Office was placed under control of the Embarkation Division of the Purchase, Storage, and Traffic Division, General Staff;[31] and on June 6, 1919, the Finance Service was established under the Director of Finance.[8]

CORPS OF ENGINEERS.

The duties of the Corps of Engineers[32] comprise reconnoitering and surveying for military purposes, including the laying out of camps; the preparation of military maps of the United States and its possessions, including cooperation with other Government or private mapping agencies, and in field operations, of maps of the theater of operations; selection of sites and formation of plans and estimates for military defenses; construction and repair of fortifications and their accessories; the supervision of the location of all buildings in or within 1 mile of any fortification; the installation of electric power plants and electric power cable connected with seacoast batteries, and furnishing the necessary electrical supplies connected therewith; planning and superintending defensive or offensive works of troops in the field; examination of routes of communication for supplies and for military movements; construction and repair of military roads, railroads, and bridges; military demolitions; execution of river and harbor improvements assigned to it; and such other duties as the President or Congress may order. It collects, arranges, and preserves all correspondence, reports, memoirs, estimates, plans, drawings, such deeds and titles as relate to the Washington Aqueduct and public buildings and grounds in the District of Columbia, and models which concern or relate in anywise to the several duties enumerated. In time of actual or threatened hostilities within the theater of operations it has charge of the location, design, and construction of wharves, piers, landings, storehouses, hospitals, and other structures of general interest; and of the construction, maintenance, and repair of roads, ferries, bridges, and incidental structures; and of the construction, maintenance, and operation of railroads under military control, including the construction and operation of armored trains. The Chief of Engineers, under the direction of the War Department, is charged with the command of the Corps of Engineers, excepting such portions as are specifically detached by order of the War Department, and with the management of the Engineer Department, including the regulation of the duties of all officers, agents, and others who may be employed under his direction.

ORDNANCE DEPARTMENT.

The Ordnance Department[33] is charged with the duty of procuring, by purchase or manufacture, and distributing the necessary ordnance and ordnance stores for the Army and the Organized Militia, and establishes and maintains arsenals and depots for their manufacture and safe-keeping. All officers or other persons in the Military Establishment to whom ordnance and ordnance supplies or funds are intrusted are required to make accounts and returns thereof to the Chief of Ordnance at the times and in the manner prescribed. Ordnance and ordnance stores include cannon and artillery vehicles and equipments; apparatus and machines for the service and maneuver of artillery; small arms, ammunition, and accouterments; horse equipments and harness for the field artillery, and horse equipments for cavalry and for all mounted men except those in the Quartermaster Corps; tools, machinery, and materials for the ordnance service; and all property of whatever nature supplied to the Military Establishment by the Ordnance Department.

The articles supplied by the Ordnance Department for use of the Medical Department during the war were comparatively few in number. They comprised horse equipment, guidons and standard carriers, small arms, and certain articles of individual equipment, such as belt, canteen, mess kit, hand ax, spurs, and spur straps.[34]

SIGNAL CORPS.[35]

The Signal Corps, under the direction of the Secretary of War, has charge of all military signal duties and of books, papers, and devices connected therewith, including telegraph and telephone apparatus and the necessary meteorological instruments for use on target ranges and for other military uses; of the construction, repair, and operation of military telegraph lines and the duty of transmitting messages for the Army, by telegraph or otherwise, and of all other duties usually pertaining to military signaling and the operations of such corps as shall be confined to strictly military matters; of the direction of the Signal Corps of the Army and the control of the officers, enlisted men, and employees attached thereto; of the supply, installation, repair, and operation of military cables, telegraph and telephone lines, and radio apparatus and stations, except such as come under the jurisdiction of the Corps of Engineers or the Coast Artillery Corps (par. 1505½, A. R., p. 303); of the supply, repair, and operation of field telegraph trains and balloon trains; of the preparation and revision of the War Department Telegraph Code; of the supervision of such instruction in military signaling, telephony, and telegraphy as may be prescribed in orders from the War Department, except such as is used by the Coast Artillery in fire control and fire direction and service of submarine mines; of the procurement, preservation, and distribution of the necessary supplies for the Signal Corps, and of the procurement and issue of Signal equipment required in coast defense.

The Aviation Section of the Signal Corps, created a separate section by act of Congress, June 3, 1916,[36] was materially enlarged by the act of Congress, July 24, 1917,[37] in the provision of which authorization was given for, among other activities, the necessary construction, maintenance, and repair of hospitals at aviations stations.

By an Executive order, issued by the President on May 20, 1918,[4] the Aviation Section was removed from control of the Chief Signal Officer and placed under the Director of Military Aeronautics, afterwards designated Chief of Air Service.[38]

THE MEDICAL DEPARTMENT.

The Medical Department is charged with the duty of investigating the sanitary condition of the Army and making recommendations in reference thereto; advising with reference to the location of permanent camps and posts; adopting systems of water supply and purification, and the disposal of waste; caring for the sick and wounded; making physical examination of officers and enlisted men; managing and controlling the enlisted force of the Medical Department and of the Army Nurse Corps; and furnishing all medical and hospital supplies.[39] It is further charged with protecting the health and preserving the efficiency of the animals of the Army.[40]

The increased activities of the Medical Department during the war period necessitated a marked expansion of the office of the Surgeon General, among the many functions of which may be emphasized those which dealt with personnel, technical supplies, sanitation, professional care and treatment of the personnel of the Army, the professional care and treatment of the animals of the Army, and the coincident administrative duties in connection with these functions. By referring to Plates I and II, the extent of the expansion of the Surgeon General's Office may be readily appreciated. The details incident to this expansion are described in separate chapters on the newly created and augmented divisions; therefore, in the present connection, only the functioning of the latter in relationship to the War Department as a whole will be given in general terms.

The military personnel of the Medical Department includes officers, female nurses, and enlisted men. During the war it was the function of the Personnel Division of the Surgeon General's Office to provide and to adequately distribute to the various activities of the Army suitable Medical Department personnel to carry on their prescribed duties. The authority for orders issued in connection with the assignment of personnel, emanating from the War Department, is the Secretary of War, through the instrumentality of The Adjutant General of the Army. It was assumed that a chief of a bureau ordinarily has the greater cognizance of the necessities for supply and distribution of personnel, and the War Department orders on the movements of Medical Department personnel are based on recommendations made by the Surgeon General. In actual practice, to promote expedition during the war, these recommendations were assumed in the formal preparation of routine personnel orders in the Personnel Division, Surgeon General's Office, which were sent to The Adjutant General's Office for the signature of an adjutant general on duty therein, thus officially promulgating the orders. Any orders affecting commissioned personnel not of a routine nature went to the Commissioned Personnel Branch, Operations Division, General Staff.[41]

In the professional care and treatment of the sick and wounded a prerequisite was suitable housing facilities or hospitals. The ultimate responsibility for the suitability of the war hospitals rested on the Medical Department; their actual provision, however, was a function of the Quartermaster Department during the earliest months of the war,[42] and subsequently of the Construction Division, a fragmented portion of the Quartermaster General's Office.[3]

Funds for the construction of hospitals were secured from Congress,[43] on estimates prepared by the Surgeon General's Office, but the funds were appropriated to the bureau charged with the construction, for expenditure on hospital construction. Liaison between the bureaus effected construction in accordance with basic plans devised by the Medical Department.

As an outcome of the necessity for close cooperation between the Surgeon General's Office and the Construction Division of the War Department, a hospital section was established in the Construction Division October 16, 1917,[44] and in June, 1918, the section of the Surgeon General's Office concerned with planning hospitals was physically placed in the Construction Division.

The necessity for hospital construction having been determined in the Surgeon General's Office, and the required plans completed in the Construction Division, the project had to be cleared by the War Industries Board,[45] through the Director, Purchase, Storage and Traffic Division, General Staff, who coordinated requirements and production activities in the several bureaus with other agencies of the Government; and had to be authorized by the director, Operations Division, General Staff, who finally determined the necessity for construction.[46]

In the establishment of hospitals in existing buildings, leases, nominal or otherwise, had to be executed prior to any essential reconstruction, remodeling, or added construction. At first, leases were effected by the Quartermaster General, on request of the Surgeon General, and after approval by the Secretary of War;[47] but, in August, 1918, a real estate unit was organized in the Purchase, Storage and Traffic Division of the General Staff, and the General Staff took over the functions connected with conducting investigations, authorizing expenditures, and executing leases.[48]

As a further time saving expedient, hospital boards were formed, each consisting of a representative from the Real Estate Section of the Purchase, Storage and Traffic Division of the General Staff, the Construction Division, and the Surgeon General's Office.[49] The duties of these boards were to investigate likely properties in the large cities. They were authorized to close leases, where rentals would not exceed $250 per bed per year, after clearance by the regional adviser of the War Industries Board.

As these boards completed their share in the prosecution of a project, other groups of officers, consisting of one versed in Medical Department requirements, from the Surgeon General's Office, and an assistant from the Hospital Section of the Construction Division, proceeded to the site and collaborated with the local constructing quartermaster in completing the plans for construction work.[49]

Medical Department supplies, when we entered the war, consisted of medicines, blank forms, surgical dressings, surgical instruments, ward equipment, gas masks, motor ambulances, X-ray machines and supplies, vaccines, and biologicals. The Surgeon General was charged with the procurement of these supplies for which special congressional appropriations were made for the Medical Department.[50]

Central administration functioned in the Supply Division of the Surgeon General's Office, into which was later incorporated the section of the office handling the administrative audit of vouchers and property returns, the whole becoming the Division of Finance and Supply, which was charged with all matters pertaining to the procurement and issue of Medical Department supplies and the administrative audit of all vouchers in payment for them, as well as for services rendered the Medical Department.[51]

In July, 1918, the Gas Defense Service of the Medical Department was transferred to the Chemical Warfare Service, created during the previous month;[5] and in August activities connected with the procurement, assembly, issue, and maintenance of motor ambulances and motor cycles were transferred to the Motor Transport Corps.[6]

On November 15, 1918, the procurement activities of the Medical Department were transferred to the Director of Purchase, Storage, and Traffic Division of the General Staff; the distribution of supplies and depot activities to the Director of Storage; the finance and accounting activities to the Director of Finance; and the requirements activities to the Director of Purchase and Storage.[52] The Director, Purchase, Storage, and Traffic, approved the retention, by the Medical Department, of activities pertaining to the procurement and distribution of artificial limbs, orthopedic and prosthetic appliances; biologicals, arsphenamine, and other arsenicals; books, journals, and reprints; printing and binding; and the administrative examination of certain vouchers, civilian medical attendance, medicines, and laundry.[53]

From November 16, 1918, the Medical Department functioned only in an advisory capacity in so far as its supplies other than those reserved to it were concerned.

The administrative functions of the Surgeon General's Office, pertaining to the operation of Medical Department personnel, in the care and treatment of the sick and wounded and the prevention of disease, bore no direct relationship with other bureaus of the War Department. They are described at length in the separate chapters on the administrative divisions of the Surgeon General's Office.

DEPARTMENT COMMANDERS.

The territorial distribution of the forces of the Army created the necessity for a more or less decentralization of military control. Before the World War this control was vested in department commanders. The organization of a department headquarters was as a wheel within a wheel and reflected on a smaller scale the provisions for administrative control obtaining at the War Department.

The peace-time organization of a territorial department commander's staff consisted of his authorized personal aides, an officer in charge of militia affairs, and one officer from each of the following corps and departments:[54] General Staff Corps, Adjutant General's Department, Inspector General's Department, Judge Advocate General's Department, Quartermaster Corps, Medical Department, Corps of Engineers, Air Service, Ordnance Department, and Signal Corps, and such additional staff officers as were assigned by the War Department, including a medical officer, who acted as sanitary inspector of the department. This staff was originally organized into two sections as follows: The territorial department staff, consisting of six officers whose functions pertained to the department as a territorial command; the division staff, consisting of six officers whose functions pertained to the division as a tactical unit to accompany the division wherever it might go.

When the new Army was organized into tactical divisions, all that pertained to their administration, instruction, training, and discipline was exempted from the control of department commanders; [55] and subsequently this exemption referred to all troops attached to the tactical divisions.[56]

Departments were maintained throughout the war, their organization and operation being very similar to those of peace times. All the new war organizations were placed directly under the War Department. Practically all Regular Army organizations when the war started were under department commanders, and they continued so until ordered elsewhere. So they were very largely expanded to war strength and equipped while still under the jurisdiction of a department commander.

REFERENCES.

(1) Bull., No. 16, W. D., June 22, 1916.
(2) A. R., 193, 1913.
(3) Annual Report of the Chief of the Construction Division, W. D., 1918, 31-32.
(4) G. O., No. 51, W. D., May 24, 1918.
(5) G. O., No. 62, W. D., June 28, 1918.
(6) G. O., No. 75, W. D., August 15, 1918.
(7) Letter from The Adjutant General of the Army to the Director of Tank Service, March 6, 1918. Subject: Creation of a Tank Service. On file, Mail and Record Division, A. G. O., 322.06 E. E. (Miscl). Letter from The Adjutant General of the Army to the Director of Tank Service, March 22, 1918. Subject: Creation of Tank Corps. On file, Record Room, S. G. O., 321.17-1.
(8) G. O., No. 72, W. D., June 5, 1919.
(9) A. R., 754, 1913.
(10) A. R., 761, 1913.
(11) A. R., 770 and 771, 1913.
(12) Bull., No. 16, W. D., June 22, 1916, 4.
(13) Bull., No. 30, W. D., May 22, 1917, 9.
(14) G. O., No. 102, W. D., August 4, 1917.
(15) G. O., No. 167, W. D., December 28, 1917.
(16) G. O., No. 5, W. D., January 11, 1918.
(17) G. O., No. 14, W. D., February 9, 1918.
(18) G. O., No. 36, W. D., April 16, 1918.
(19) G. O., No. 80, W. D., August 26, 1918.
(20) Bull., No. 16, W. D., June 22, 1916, 6 et seq.
(21) A. R., 774, 1913.
(22) G. O., No. 80, W. D., August 26, 1918, par. 5.
(23) G. O., No. 86, W. D., September 18, 1918.
(24) G. O., No. 80, W. D., August 26, 1918, par. 6, c.
(25) A. R., Article LXVIII, 1913.
(26) G. O., No. 74, W. D., August 14, 1918.
(27) A. R., Article LXVIII, 1913.
(28) A. R., Article LXXIII, 1913.
(29) Annual Report, Chief of Construction Division, W. D., 1918, 4.
(30) G. O., No. 38, W. D., April 18, 1918.
(31) G. O., No. 52, W. D., May 25, 1918.
(32) A. R., Article LXXV, 1913.
(33) A. R., Article LXXVI, 1913.
(34) Manual for the Medical Department, 1916, 865, 879, 943.
(35) A. R., Article LXXVII, 1913.
(36) Bull., No. 16, W. D., June 22, 1916, 15.
(37) Bull., No. 46, W. D., August 15, 1917.
(38) G. O., No. 51, W. D., May 24, 1918. A. R., Article LXXXI (C. A. R., No. 73, June 10, 1918)
(39) A. R., Article LXXIV, 1913.
(40) S. R., No. 70, W. D.
(41) G. O., No. 80, W. D., August 26, 1918. G. O., No. 86, W. D., September 18, 1918.
(42) A. R., 1000, 1464-1470, 1913.

(43) Bull., No. 30, W. D., May 9, 1917, 24.

(44) Memo. from officer in charge, cantonment division, to all divisions, Construction Division, October 16, 1917. Subject: Hospital Section. On file, Mail and Record Room, Construction Service, Quartermaster Corps, 652–B General.

(45) Verbatim excerpt from minutes of meeting of Council of National Defense, held July 28, 1917. On file, Finance and Supply File, S. G. O., $\frac{533}{1}$ (Misc.).

(46) G. O., No. 80, W. D., August 26, 1918, par. 5, c.

(47) A. R., 1000, 1913.

(48) G. O., No. 80, W. D., August 26, 1918, par. 6, a.

(49) Memo. for director of operations from Acting Surgeon General, September 16, 1918. Subject: Hospital Boards. On file, Record Room, S. G. O., 334.7–1 (General).

(50) Article on "Preparedness of the Medical Department for War," delivered at the War College, November 16, 1916. On file, Finance and Supply Division, S. G. O., 12709 E (Old Files).

(51) Orders, Surgeon General's Office, September 20, 1917. On file, Record Room, S. G. O., Finance and Supply Division, 50882–C (Old Files).

(52) Supply Circular No. 102, Purchase, Storage and Traffic Division, General Staff, October 24, 1918.

(53) Letter from Assistant to Director, Purchase, Storage, and Traffic Division, General Staff, to the Surgeon General, November 9, 1918. Subject: Supply Circular No. 102. On file, Record Room, S. G. O., 024 (Finance and Supply Division).

(54) A. R., 197–199, 1913. (C. No. 73, June 10, 1918.)

(55) G. O., No. 96, W. D., July 20, 1917.

(56) G. O., No. 137, W. D., October 30, 1917.

SECTION II.

ORGANIZATION AND ADMINISTRATION OF THE SURGEON GENERAL'S OFFICE.

CHAPTER I.

THE SURGEON GENERAL.

The Surgeon General of the Army, who has the rank, pay, and allowances of a major general,* is the ranking officer of the Medical Corps, Chief of the Medical Department, and head of the Surgeon General's Office. As the head of a bureau of the War Department he is charged with the supervision of the expenditures of the Medical Department appropriations, and is the adviser of the Secretary of War and the Chief of Staff upon matters relating to the health, sanitation, and physical fitness of the Army and the administration of the medical service in all its branches. He has exclusive control of general hospitals, hospital ships, and trains, except in matters pertaining to the administration of military justice, but not that portion of the Medical Department serving as parts of other commands except in so far as related to particular duties and Medical Department reports. He likewise had exclusive control of medical supply depots until November 15, 1918, when the major activities connected with Medical Department supplies were transferred to the Director of the Purchase, Storage, and Traffic Division, General Staff.

Maj. Gen. William C. Gorgas served as Surgeon General from April 6, 1914, to October 4, 1918. Maj. Gen. Merritte W. Ireland succeeded him on October 30, 1918. During the brief interim Brig. Gen. Charles Richard was Acting Surgeon General.

THE SURGEON GENERAL'S OFFICE.

The exigencies of war and the enormous and sudden expansion of the entire Military Establishment necessitated numerous changes in and additions to the duties exercised by the Surgeon General in time of peace. The administrative machinery through which these functions were executed and the necessary changes therein made was operated in and from the Surgeon General's Office in Washington.

The expansion made possible by the national defense act of 1916, necessitated by the declaration of war, and furthered by the Overman Act of May 18, 1917, authorizing the President to increase temporarily the Military Establishment of the United States, was effected through the agency of the Surgeon General's Office, under the administration of the Surgeon General.

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* By act of Congress approved June 4, 1920.

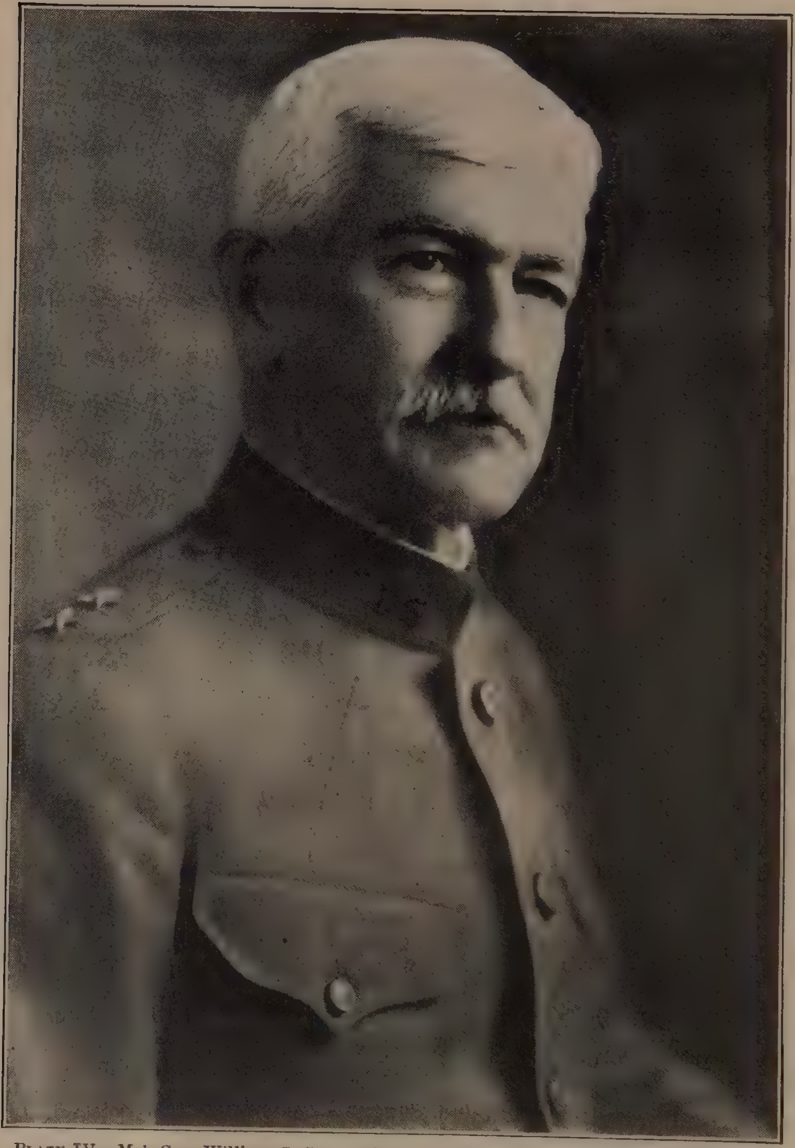

PLATE IV.—Maj. Gen. William C. Gorgas, Surgeon General of the Army, April 6, 1914, to October 4, 1918.

PLATE V.—Maj. Gen. Merritte W. Ireland, Surgeon General of the Army, October 30, 1918.

When war was declared the Surgeon General's Office consisted of the Surgeon General, the six medical officers of his staff, and the civilian personnel, including the chief clerk and 146 civilian employees, of whom 43 constituted the Museum and Library Division, stationed in the Army Medical Museum and library. The work of the Surgeon General's Office proper, which was then located in the State, War, and Navy Building, was directed by four divisions: Division of Sanitation; Supply Division; Record, Correspondence, and Examining Division; and Museum and Library Division.

It was soon realized that the personnel of the office, military and civilian, would be totally inadequate for expediting the work which the necessary expansion of the Medical Department in general would entail. It became obvious, too, that additional space would be required, as well as a complete reorganization of the office administration. Tentative plans for such reorganization were formulated in May, 1917, and in July six floors of the Mills Building, across the street from the State, War, and Navy Building, were secured for the Surgeon General's Office. The administration of office routine was then placed under an expert in business efficiency. At the end of one year the Surgeon General's Office had expanded into an organization of some 30 administrative units, with a personnel of 181 medical officers and 1,543 civilian employees, installed (May 3, 1918) in the building known as Unit F of the group of temporary structures on Sixth and Seventh Streets, extending from B Street NW. to B Street SW. Typical floor plans of one of the seven wings, three floors each, are shown in Plates VI, VII, and VIII. The utilization of the floor space, quite naturally, varied from time to time. Five wings of the seven wings were occupied by the Surgeon General's Office at the height of the war, during the summer of 1918. Chart I shows the organization at that time.

The administrative history of this expanded organization is given in the following accounts of the activities of the various divisions and subdivisions of the office.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

ASSISTANTS TO THE SURGEON GENERAL.

Birmingham, H. P., Brig. Gen., M. D.
Richard, Charles, Brig. Gen., M. D.[b]

EXECUTIVE OFFICERS.

Church, J. R., Col., M. C.
Darnall, C. R., Col., M. C.
Furbush, L. L., Col., M. C.

ASSISTANT EXECUTIVE OFFICERS.

Delaney, M. A., Col., M. C.
Truby, A. E., Col., M. C.

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[a] In each group names have been arranged alphabetically, irrespective of chronological sequence of service.
[b] Brigadier General Richard was acting Surgeon General during General Gorgas's absence in France.

SURGEON GENERAL'S OFFICE

DIAGRAMMATIC PLAN OF FIRST FLOOR

JUNE–JULY, 1918

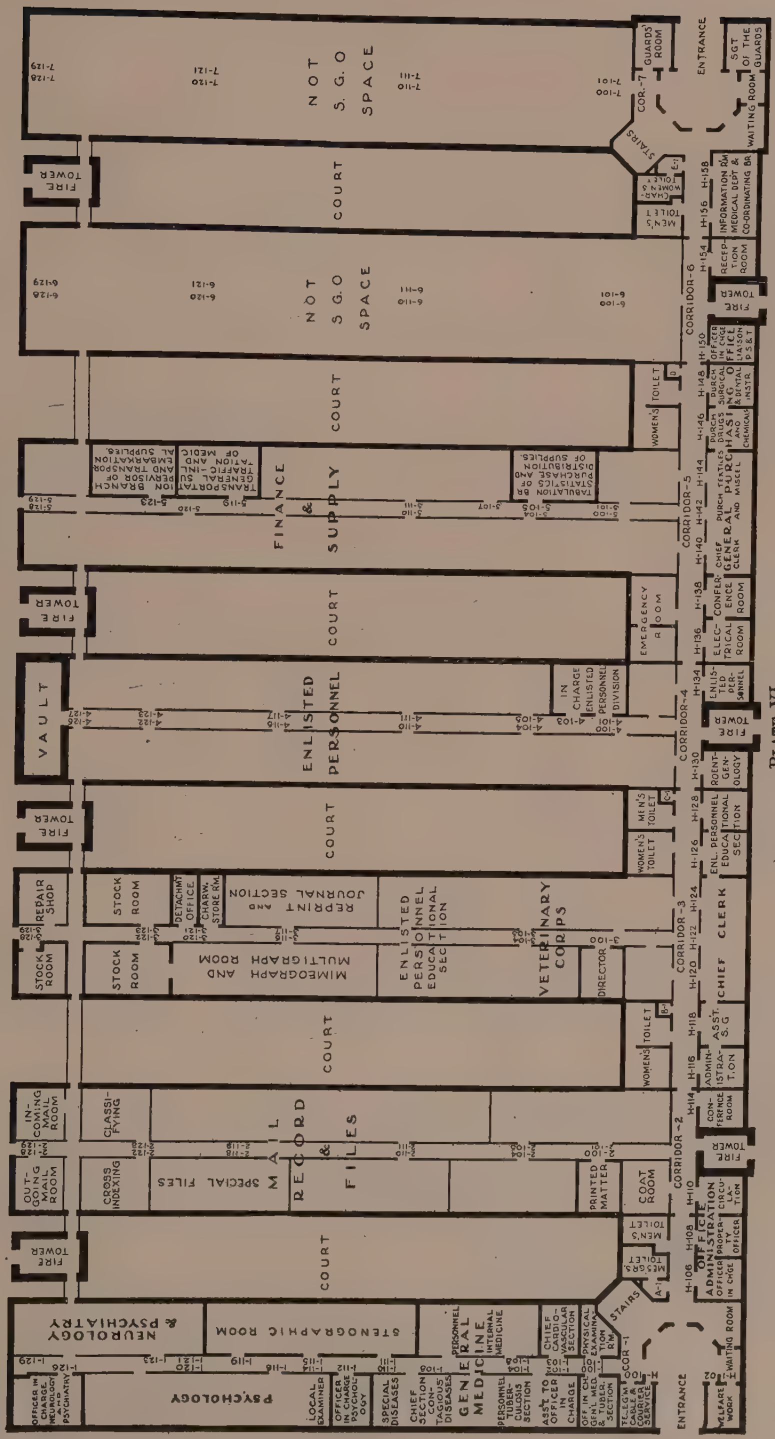

NOT S. G. O SPACE
COURT
FIRE TOWER
GUARDS' ROOM
ENTRANCE
SGT OF THE GUARDS
WAITING ROOM
STAIRS
COR.-7
MEN'S TOILET
WOMEN'S TOILET
INFORMATION RM MEDICAL DEPT & CO-ORDINATING BR.
RECEPTION ROOM
CORRIDOR-6
OFFICER IN CHGE SURGICAL DIV.
PURCH SURGICAL & DENTAL INSTR
PURCH DRUGS AND CHEMICALS
PURCH TEXTILES AND MISCEL
CHIEF CLERK
GENERAL PURCHASING OFFICE
FINANCE & SUPPLY
TRANSPORTATION BRANCH SUPERVISOR OF GENERAL TRAFFIC-INL AND TRANSPORTATION AND EMBARKATION OF MEDICAL SUPPLIES.
TABULATION BR STATISTICS OF PURCHASE AND DISTRIBUTION OF SUPPLIES.
CORRIDOR-5
CONFERENCE ROOM
ELECTRICAL ROOM
EMERGENCY ROOM
ENLISTED PERSONNEL
IN CHARGE ENLISTED PERSONNEL DIVISION
VAULT
CORRIDOR-4
ROENTGENOLOGY
ENL. PERSONNEL EDUCATIONAL SECTION
REPAIR SHOP
STOCK ROOM
DETACHM'T OFFICE
CHARW. STORE RM.
REPRINT AND JOURNAL SECTION
MIMEOGRAPH AND MULTIGRAPH ROOM
ENLISTED PERSONNEL EDUCATIONAL SECTION
VETERINARY CORPS
DIRECTOR
CORRIDOR-3
CHIEF CLERK
ASST. S. G
ADMINISTRATION
CONFERENCE ROOM
IN-COMING MAIL ROOM
OUT-GOING MAIL ROOM
CLASSIFYING
CROSS INDEXING
SPECIAL FILES
MAIL RECORD & FILES
PRINTED MATTER
COAT ROOM
CORRIDOR-2
MESGRS. TOILET
OFFICE ADMINISTRATION OFFICER IN CH'GE PROPERTY OFFICER CIRCULATION
NEUROLOGY & PSYCHIATRY
STENOGRAPHIC ROOM
PSYCHOLOGY
OFFICER IN CHARGE NEUROLOGY AND PSYCHIATRY
LOCAL EXAMINER
OFFICER IN CHARGE PSYCHOLOGY
SPECIAL DISEASES
CHIEF SECTION CONTAGIOUS DISEASES
GENERAL MEDICINE
PERSONNEL
INTERNAL MEDICINE
PERSONNEL TUBERCULOSIS SECTION
CHIEF CARDIO-VASCULAR SECTION
ASS'T TO OFFICER IN CHARGE
PHYSICAL EXAMINATION RM.
OFF. IN CH. GEN'L MED. & TUBER. SECTION
TELEGM CABLE & COURIER SERVICE
COR-1
WELFARE WORK
WAITING ROOM
STAIRS

PLATE VI.

SURGEON GENERAL'S OFFICE
DIAGRAMMATIC PLAN OF SECOND FLOOR
JUNE–JULY, 1918

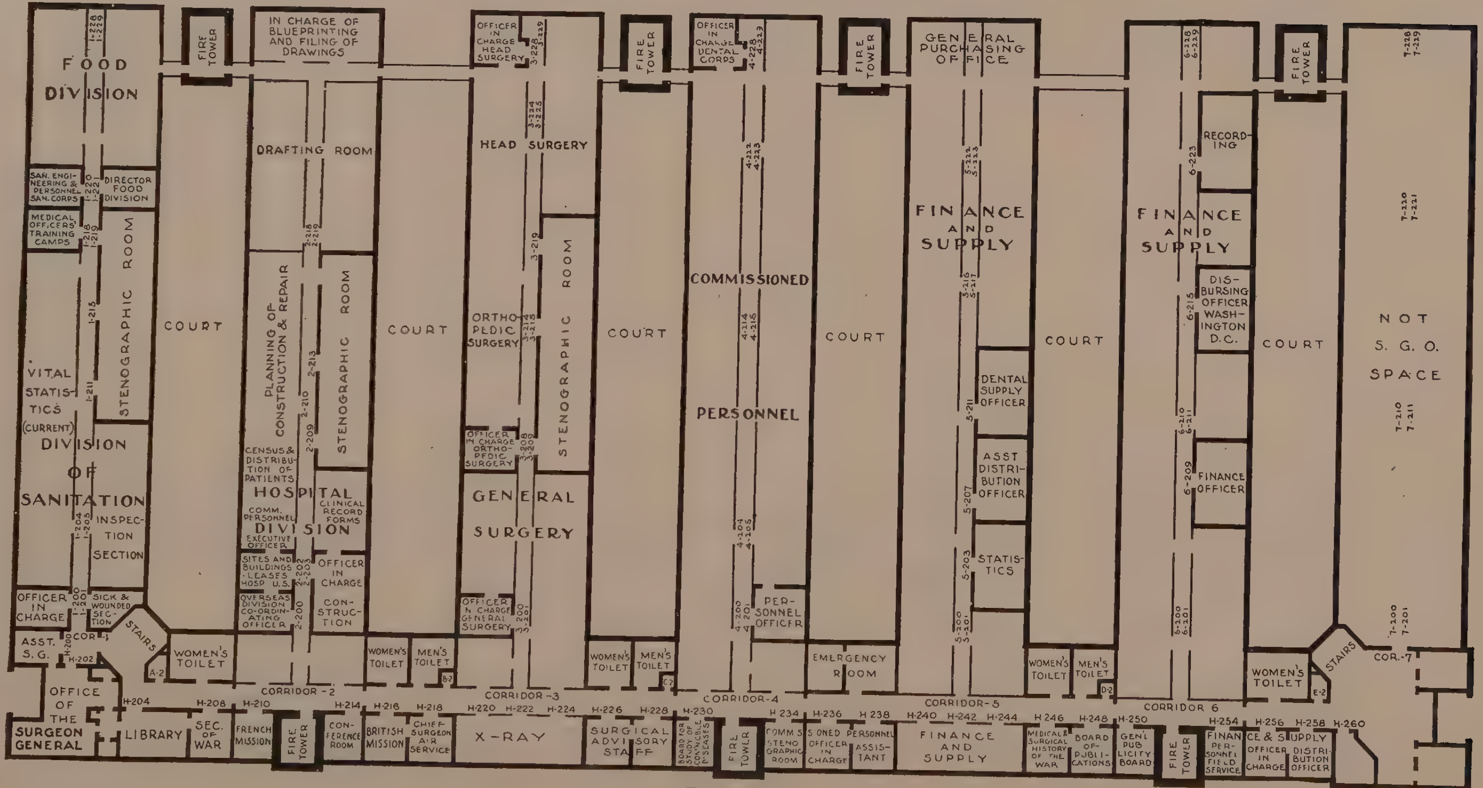
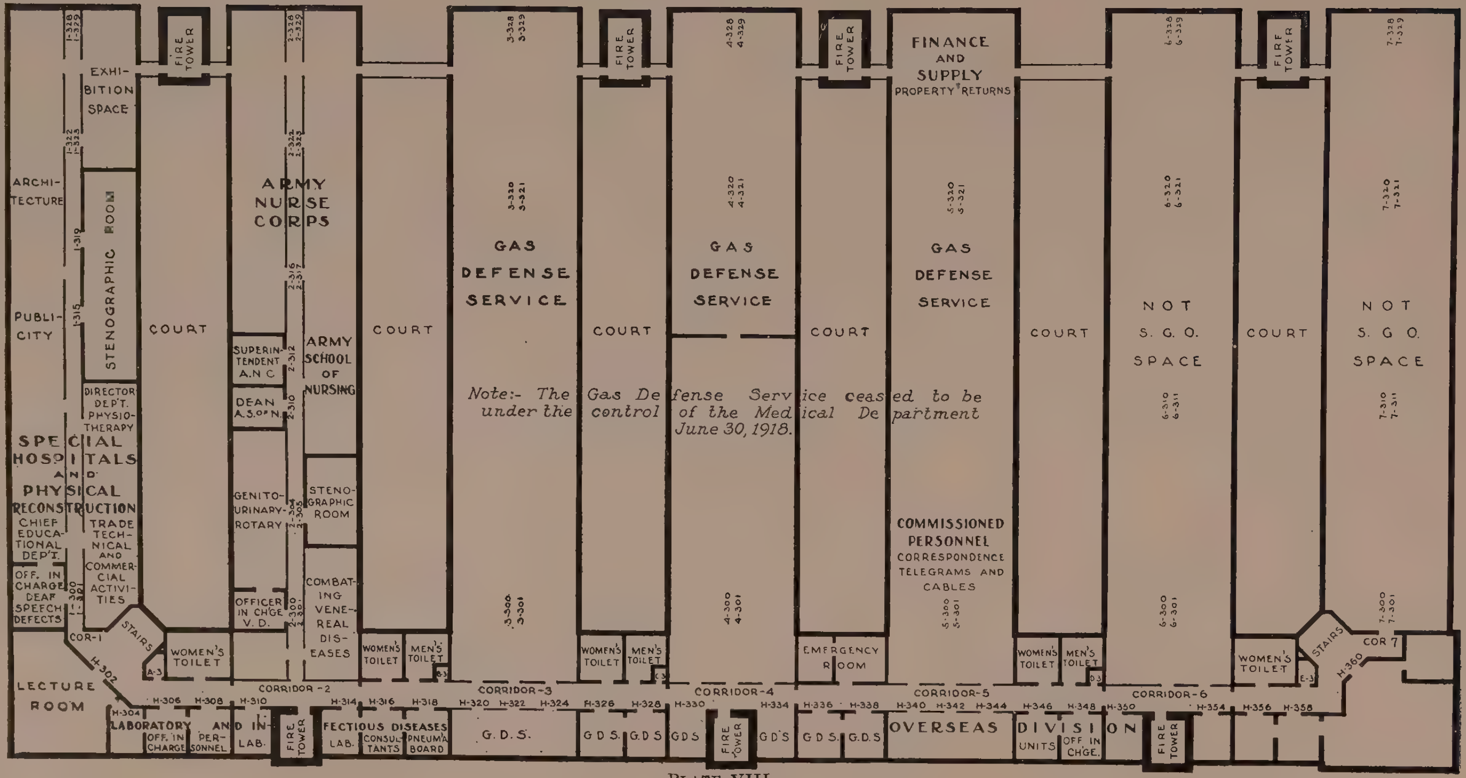

FOOD DIVISION
SAN. ENGINEERING & PERSONNEL SAN. CORPS
DIRECTOR FOOD DIVISION
MEDICAL OFFICERS' TRAINING CAMPS
STENOGRAPHIC ROOM
VITAL STATISTICS (CURRENT)
DIVISION OF SANITATION
INSPECTION SECTION
OFFICER IN CHARGE
SICK & WOUNDED SECTION
ASST. S. G.
COR.-1
STAIRS
WOMEN'S TOILET
A-2
OFFICE OF THE SURGEON GENERAL
LIBRARY
SEC. OF WAR
FRENCH MISSION
FIRE TOWER
COURT
IN CHARGE OF BLUEPRINTING AND FILING OF DRAWINGS
DRAFTING ROOM
PLANNING OF CONSTRUCTION & REPAIR
STENOGRAPHIC ROOM
CENSUS & DISTRIBUTION OF PATIENTS
HOSPITAL DIVISION
CLINICAL RECORD FORMS
COMM. PERSONNEL
EXECUTIVE OFFICER
SITES AND BUILDINGS - LEASES HOSP. U.S.
OFFICER IN CHARGE
OVERSEAS DIVISION CO-ORDINATING OFFICER
CONSTRUCTION
CORRIDOR - 2
WOMEN'S TOILET
MEN'S TOILET
B-2
CONFERENCE ROOM
BRITISH MISSION
CHIEF SURGEON AIR SERVICE
OFFICER IN CHARGE HEAD SURGERY
HEAD SURGERY
STENOGRAPHIC ROOM
ORTHOPEDIC SURGERY
OFFICER IN CHARGE ORTHOPEDIC SURGERY
GENERAL SURGERY
OFFICER IN CHARGE GENERAL SURGERY
CORRIDOR -3
X-RAY
SURGICAL ADVISORY STAFF
C-2
BOARD FOR STUDY OF CONTAGIOUS DISEASES
OFFICER IN CHARGE DENTAL CORPS
COMMISSIONED PERSONNEL
PERSONNEL OFFICER
EMERGENCY ROOM
CORRIDOR-4
COMMISSIONED STENOGRAPHIC ROOM
OFFICER IN CHARGE
PERSONNEL ASSISTANT
GENERAL PURCHASING OFFICE
FINANCE AND SUPPLY
DENTAL SUPPLY OFFICER
ASST DISTRIBUTION OFFICER
STATISTICS
CORRIDOR-5
FINANCE AND SUPPLY
MEDICAL & SURGICAL HISTORY OF THE WAR
BOARD OF PUBLICATIONS
GEN'L PUBLICITY BOARD
D-2
RECORDING
FINANCE AND SUPPLY
DISBURSING OFFICER WASHINGTON D.C.
FINANCE OFFICER
CORRIDOR 6
FINANCE & SUPPLY
PERSONNEL FIELD SERVICE
OFFICER IN CHARGE
DISTRIBUTION OFFICER
E-2
COR.-7
NOT S. G. O. SPACE
H-202
H-204
H-208
H-210
H-214
H-216
H-218
H-220
H-222
H-224
H-226
H-228
H-230
H 234
H-236
H 238
H-240
H-242
H-244
H 246
H-248
H-250
H-254
H-256
H-258
H-260

PLATE VII.

SURGEON GENERAL'S OFFICE
DIAGRAMMATIC PLAN OF THIRD FLOOR
JUNE–JULY, 1918


ARCHITECTURE
PUBLICITY
EXHIBITION SPACE
STENOGRAPHIC ROOM
DIRECTOR DEP'T. PHYSIO-THERAPY
SPECIAL HOSPITALS AND PHYSICAL RECONSTRUCTION
CHIEF EDUCATIONAL DEP'T.
TRADE TECHNICAL AND COMMERCIAL ACTIVITIES
OFF. IN CHARGE DEAF SPEECH DEFECTS
COR-1
STAIRS
A-3
LECTURE ROOM
H-302
H-304
FIRE TOWER
COURT
WOMEN'S TOILET
ARMY NURSE CORPS
SUPERINTENDENT A.N.C.
DEAN A.S. of N.
ARMY SCHOOL OF NURSING
GENITO-URINARY-ROTARY
STENOGRAPHIC ROOM
OFFICER IN CHGE V.D.
COMBATING VENEREAL DISEASES
MEN'S TOILET
GAS DEFENSE SERVICE
EMERGENCY ROOM
FINANCE AND SUPPLY PROPERTY RETURNS
COMMISSIONED PERSONNEL CORRESPONDENCE TELEGRAMS AND CABLES
NOT S. G. O. SPACE
COR 7
H-360
CORRIDOR-2
CORRIDOR-3
CORRIDOR-4
CORRIDOR-5
CORRIDOR-6
H-306
H-308
H-310
H-314
H-316
H-318
H-320
H-322
H-324
H-326
H-328
H-330
H-334
H-336
H-338
H-340
H-342
H-344
H-346
H-348
H-350
H-354
H-356
H-358
LABORATORY AND INFECTIOUS DISEASES
OFF. IN CHARGE
PERSONNEL
LAB.
CONSULTANTS
PNEUMA BOARD
G. D. S.
G D S
GD'S
OVERSEAS DIVISION
UNITS
OFF IN CHGE.
1-328
1-329
1-322
1-323
1-319
1-315
1-300
1-301
2-328
2-329
2-322
2-323
2-316
2-317
2-312
2-310
2-304
2-305
2-300
2-301
3-328
3-329
3-320
3-321
3-300
3-301
4-328
4-329
4-320
4-321
4-300
4-301
5-320
5-321
5-300
5-301
6-328
6-329
6-320
6-321
6-310
6-311
6-300
6-301
7-328
7-329
7-320
7-321
7-310
7-311
7-300
7-301
E-3
D-3
C-3
B-3

Note:- The Gas Defense Service ceased to be under the control of the Medical Department June 30, 1918.

PLATE VIII.

ILLUSTRATING ORGANIZATION WITHIN THE SURGEON GENERAL'S OFFICE BY UNITS OF ACTIVITY AND RELATIONSHIP OF COOPERATING ACTIVITIES.

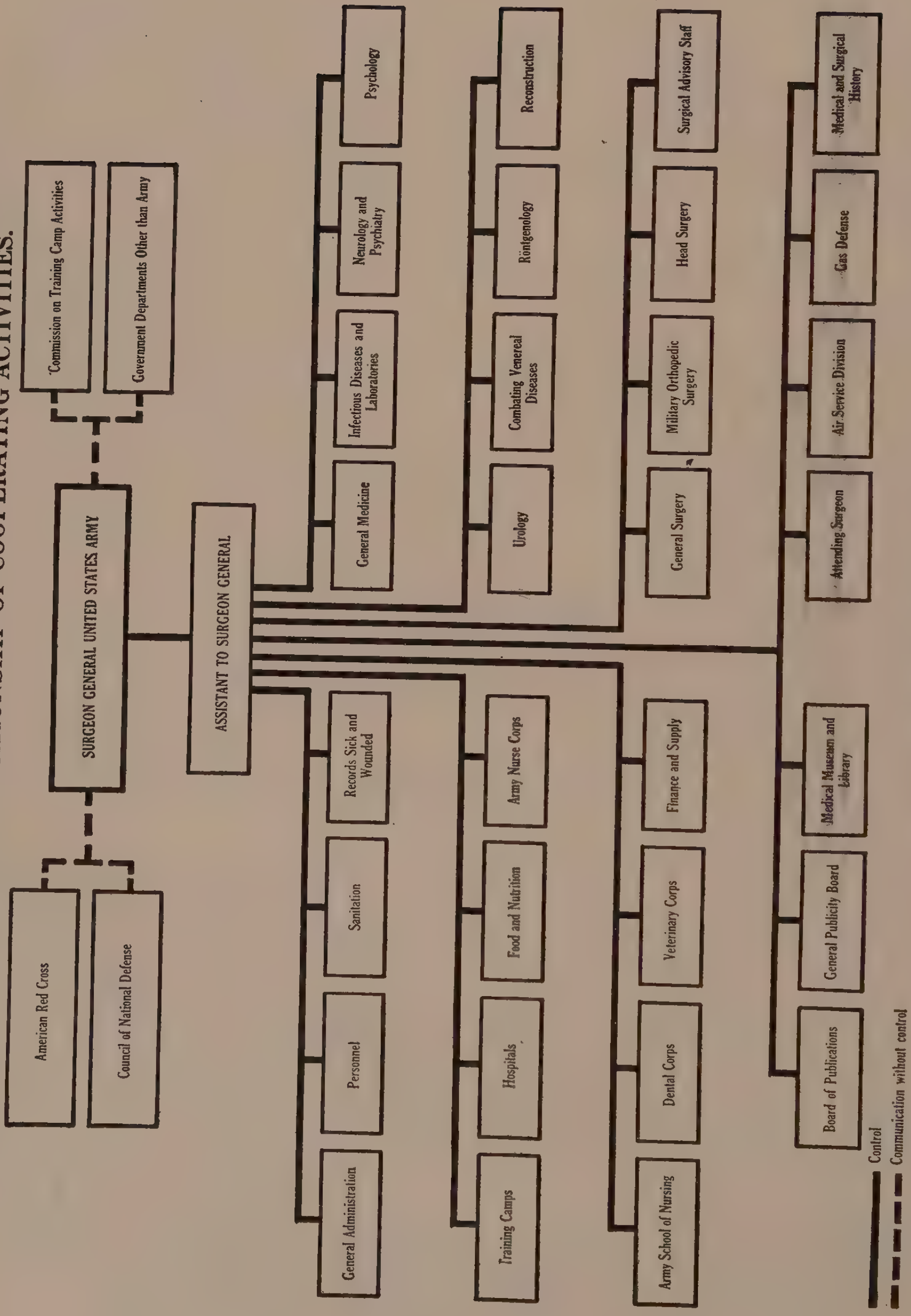

American Red Cross
Council of National Defense
SURGEON GENERAL UNITED STATES ARMY
Commission on Training Camp Activities
Government Departments Other than Army
ASSISTANT TO SURGEON GENERAL
General Administration
Personnel
Sanitation
Records Sick and Wounded
General Medicine
Infectious Diseases and Laboratories
Neurology and Psychiatry
Psychology
Training Camps
Hospitals
Food and Nutrition
Army Nurse Corps
Urology
Combating Venereal Diseases
Röntgenology
Reconstruction
Army School of Nursing
Dental Corps
Veterinary Corps
Finance and Supply
General Surgery
Military Orthopedic Surgery
Head Surgery
Surgical Advisory Staff
Board of Publications
General Publicity Board
Medical Museum and Library
Attending Surgeon
Air Service Division
Gas Defense
Medical and Surgical History
Control
Communication without control

CHART I.—Surgeon General's Office, June, 1918.

LIAISON OFFICERS.

On April 25, 1917, an officer of the Royal Army Medical Corps was stationed in the Surgeon General's Office as British liaison officer. On January 22, 1918, he was succeeded by another officer, Royal Army Medical Corps, who remained until the end of the war. The liaison officer of the Service de Santé of the French Army arrived on June 4, 1917, remaining until the armistice; he had an assistant, who arrived July 30, 1917, and returned to France November 3, 1917.

On June 11, 1917, an officer of the Medical Corps was detailed to duty as liaison officer in the British War Office, Adastral House, London. The liaison officer, while reporting to the Chief Surgeon, American Expeditionary Forces, furnished the British Government with all necessary information regarding the Medical Department of the United States Army; gave similar information to our own medical establishment concerning the British medical organization; aided in securing from the British Government for our forces in England supplies, hospital sites, return of the sick and wounded; and fulfilled a large number of other duties, such as reporting on American casualties, placing specialists and patients in British Army hospitals, making recommendations for promotion, and looking after pay allotments and Red Cross allowances. On July 7, 1917, the liaison officer was defined as chief surgeon of American forces on duty with the British Army in England. Similar officers were assigned to temporary duty in France in order to cooperate with the medical establishment of the French Army in effecting necessary business.

PERSONNEL.

(April, 1917, to December, 1919.)

Liaison Officers.

BRITISH ARMY.

Goodwin, T. H., Col., R. A. M. C.
Morgan, Claude K., Col., R. A. M. C.
Aitken, J. J., Lieut. Col., Veterinary Corps.
Gilmour, John, Capt., R. A. M. C.

FRENCH ARMY.

Dercle, C. U., Médecin Major de 1^re^ Classe, du Service de Santé.
Rist, E., Médecin Major de 2^e^ Classe, du Service de Santé.

CHAPTER II.

ADMINISTRATIVE DIVISION.

The administrative program of the Surgeon General's Office as a whole, prior to and at the time of the entry of the United States into the World War, was carried out mainly through the Record, Correspondence, and Examining Division, under the immediate direction of the chief clerk. The functions of the division were concerned with: (*a*) The administration of the business operations of the office, involving general supervision over the civilian employees, their selection, payment, etc., and the civilian employees of the Medical Department at Large; (*b*) the keeping of general official records of the office and of the indices of same, and the custody of documents; (*c*) the administrative examination of claims and vouchers, and the keeping of the accounts of the financial operations of the Medical Department; (*d*) the settlement of returns of Medical Department property; (*e*) the construction and repair of general and post hospitals and quarters for noncommissioned officers of the Medical Department; (*f*) the management of hospital fund; (*g*) the procurement and distribution of office supplies, stationery, etc., used in the office, and blank forms used by the Medical Department; (*h*) miscellaneous business not directly pertaining to any other division of the office.

On September 20, 1917, the Examining Sections (*c* and *d*) of this division were consolidated with other sections of the old Supply Division, making a new single unit designated as the Finance and Supply Division.[1] The section handling the construction and repair of hospitals was made a part of the newly created Hospital Division.[2] The remaining sections of the old Record, Correspondence, and Examining Division became the Administrative Division.[1]

The personnel of the Surgeon General's Office on April 6, 1917, consisted of the Surgeon General, his staff of six medical officers, and 146 civilian employees, 43 of the latter being assigned to the Administrative Division. Within a year's time the personnel, commissioned and civilian, had increased to 181 and 1,543, respectively. These numbers were augmented, by December, 1918, to 218 and 1,617, respectively.[3] The organization was gradually expanded, new activities being added as the needs of the service warranted, until in April, 1919, the scope of the Administrative Division had the following sections:[4] (*a*) Chief Clerk's Section; (*b*) Mail and Record Section; (*c*) Civilian Personnel Section, Medical Department at Large; (*d*) Hospital Fund and Pay Roll Section; (*e*) Publicity Section; (*f*) Information Section; (*g*) Circulation and Mimeograph Section; (*h*) Stock Room Section.

The Chief Clerk's Section was charged with the selection of eligibles for appointment as clerks in the office, the preparation of letters and telegrams incident to getting new appointees into the service, their assignment, discipline, etc.

The Mail and Record Section handled the receipt and dispatch of incoming and outgoing mail, and the recording, indexing, and filing thereof. The old record card system, long in use throughout the War Department, having proved inadequate for the handling of the increased volume of business consequent upon war activity, was supplanted, by War Department orders, by the War Department correspondence file system based on the Dewey Decimal System of Library Classification.[5] The change took effect in the Surgeon General's Office on October 11, 1917.

The selection, assignment, transfer, and discipline of the civilian force of the Medical Department at Large likewise was handled in the Administrative Division. At the outbreak of the war, the civilian force in the field numbered 260;[6] this was gradually augmented until the maximum force reached 20,000.[7]

The preparation of the semimonthly pay rolls for the office clerks, the keeping of their time records, and the custody of the hospital fund, formerly handled by one clerk, during the height of the war required the services of 10 clerks.

The divers calls for information, requests for interviews, etc., reached such numbers as to indicate the establishment of an Information Section,[8] to which visitors were referred and by which their names were recorded and the nature of the business they desired to transact communicated to the branch concerned. This section was established verbally by the Executive Assistant to the Surgeon General, while the office was still located in the State, War, and Navy Building. It was gradually expanded, and was confirmed later by order of the Secretary of War.[8]

The Publicity Section became the General Publicity Board, under which title its history is given.

The work in connection with the promulgation of instructions and orders received from higher authority and those emanating from this office became so extensive as to necessitate the enlargement of the circulation and mimeographic service, by which it was executed. The mimeographic work, formerly handled by one clerk, ultimately required the services of one limited service man, six clerks, and three mimeograph and multigraph operators.

The housing situation was so acute in Washington as to discourage newly appointed clerks reporting for duty. A Welfare Subsection of the Chief Clerk's Section was established, through which were handled requests for living quarters, complaints in general, and questions relating to the general welfare of the female employees, removed from their homes and firesides to the unfamilar environment of a strange city. During the influenza epidemic the service rendered by the Welfare Section was of immeasurable value in assisting in locating employees too ill to report to the office, having them placed in hospitals, or procuring nursing service, if available.

The influx of civilian employees entailed the procurement of vast quantities of office supplies, furniture, and equipment, the accountability for which, and its distribution throughout the office, devolved upon the Stock Room Section.

The administrative details and the necessary accretions to the personnel, both commissioned and civilian, required to handle the public business with the necessary degree of dispatch, made it imperative to vacate the 16 rooms (8,049 square feet) in the State, War, and Navy Departments Building, which had housed the office since 1887. In July, 1917, that part of the Surgeon

General's Office which was housed in this building, with the exception of the Statistical Branch of the Sanitary Division, was moved to six floors of the Mills Building, at Seventeenth Street and Pennsylvania Avenue NW.[9] The space (32,000 square feet) in this building allotted by the Secretary of War to the Surgeon General was soon found to be inadequate for the needs of the office. The Veterinary Branch was later moved to the Cassell House, 1907 F Street NW.[10] The newly created Finance and Supply Division and the Division of Special Hospitals and Physical Reconstruction were housed in the Premier Apartment Building at 718 Eighteenth Street,[11] while the Statistical Branch was moved, first, to the old Land Office Building at Seventh and E Streets NW.[12], thence to the Mills Building,[13] thence to the Hooe Building at 1380 F Street NW.,[14] and finally to the garage building at Twenty-fourth and M Streets NW.[15] The combined floor space occupied by the Surgeon General's Office in January, 1918, was 147,966 square feet, which included the Museum and Library Division, housed in a Government-owned structure at Seventh and B Streets SW., with a floor space of 73,818 square feet.

A still greater expansion of files and an augmentation of personnel made it obligatory to seek larger quarters in a building with floor space enough to shelter the different units scattered in nearly every section of the city. Accordingly, in May, 1918, the office, with the exception of the Museum and Library Division, was again moved, this time to Unit F of the Henry Park Buildings (temporary), situated at Seventh and B Streets NW.[16] Originally Unit F was constructed for the use of the Medical Department, but the needs of other War Department bureaus for office space became so pressing that the Medical Department was allotted but 179,078 square feet. This space enabled the Surgeon General, for the first time since the United States entered the war, to house under one roof all of the activities of his office, with the exception, as stated, of the Army Medical Museum and the Library, which were housed in close enough proximity to facilitate the transaction of business.

The rapidity and extent of the expansion of the Surgeon General's Office, and the volume of the work thereby thrown upon the Administrative Division, may be comprehended when one studies the facts and figures embodied in the following table. The organization of this division at the period of greatest war activity is shown in Chart II.

Mail and Record Section, Administrative Division.

Period.	Quantity of mail handled.		Papers filed monthly.	Requests for records.		Personnel.		
	Monthly.	Daily.		Monthly.	Found.	Civilians.	Enlisted.	Total.
					Per cent.			
January, 1917	10,436	402	6,500	100	100.0	15	0	15
August, 1917	87,125	3,227	15,835	3,260	95.0	45	0	45
January, 1918	167,863	5,415	76,837	4,837	85.0	62	0	62
October, 1918	342,897	11,061	177,396	12,046	91.0	120	[a] 25	145
December, 1918	223,563	7,212	139,473	4,684	95.0	120	[a] 25	145
August, 1921	67 740	2,509	36,761	1,390	99.2	25	0	25

[a] Limited service men.

Greatest number of pieces of mail handled in one day, 15,180, Oct. 3, 1918.

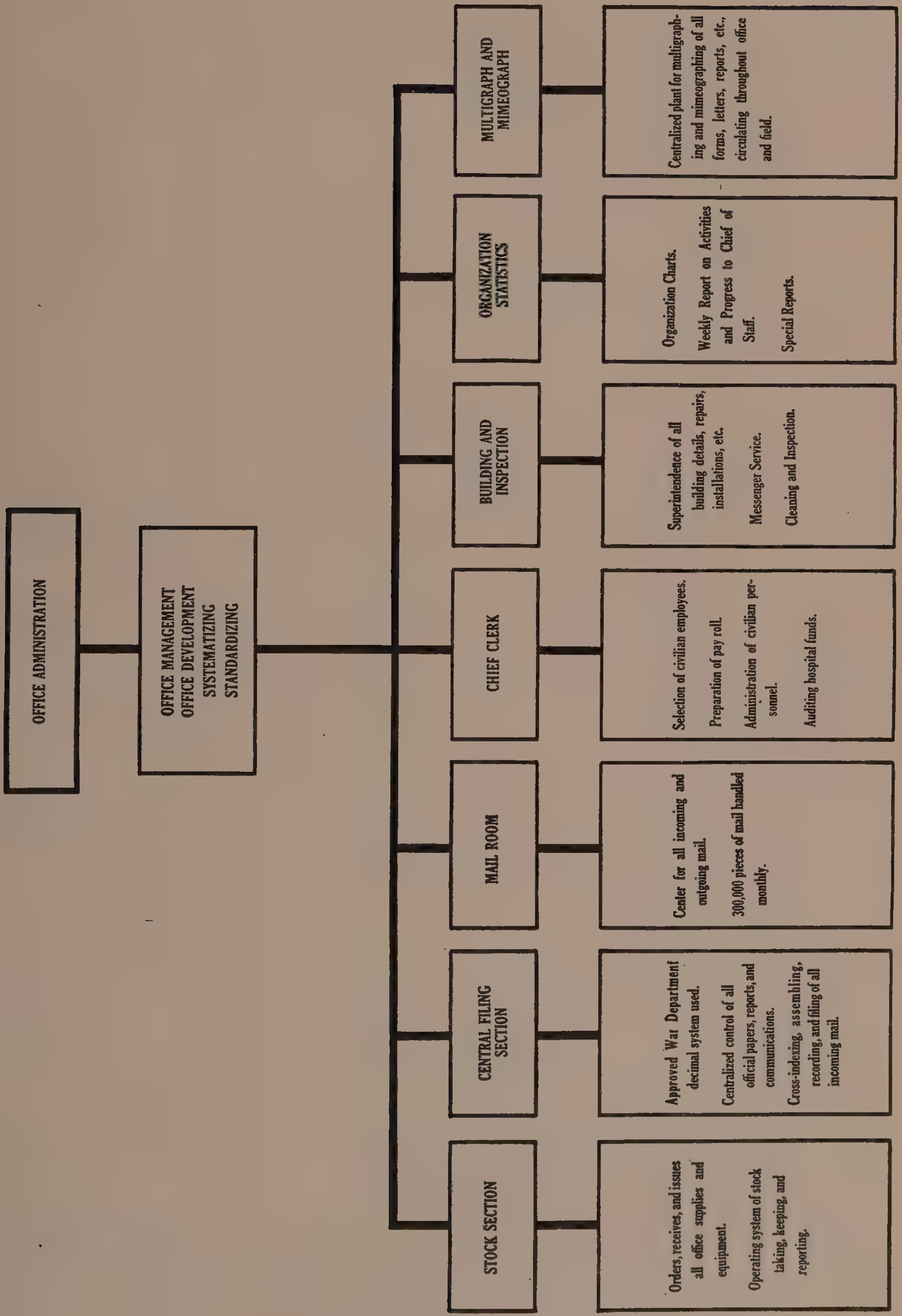

OFFICE ADMINISTRATION
OFFICE MANAGEMENT
OFFICE DEVELOPMENT
SYSTEMATIZING
STANDARDIZING
STOCK SECTION
Orders, receives, and issues all office supplies and equipment.
Operating system of stock taking, keeping, and reporting.
CENTRAL FILING SECTION
Approved War Department decimal system used.
Centralized control of all official papers, reports, and communications.
Cross-indexing, assembling, recording, and filing of all incoming mail.
MAIL ROOM
Center for all incoming and outgoing mail.
300,000 pieces of mail handled monthly.
CHIEF CLERK
Selection of civilian employees.
Preparation of pay roll.
Administration of civilian personnel.
Auditing hospital funds.
BUILDING AND INSPECTION
Superintendence of all building details, repairs, installations, etc.
Messenger Service.
Cleaning and Inspection.
ORGANIZATION STATISTICS
Organization Charts.
Weekly Report on Activities and Progress to Chief of Staff.
Special Reports.
MULTIGRAPH AND MIMEOGRAPH
Centralized plant for multigraphing and mimeographing of all forms, letters, reports, etc., circulating throughout office and field.

CHART II.—Administrative Division, Surgeon General's Office, June, 1918.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Dickson, R. A., Lieut. Col., S. C., chief.
Gooch, J. L., jr., Maj., Sanitary Corps, chief.

Bonner, W. C., Capt., S. C.
Springman, H. E., Capt., S. C.
Wilson, C. H., Capt., S. C.
Gomprecht, B. S., First Lieut., S. C.
Kernan, W. H., First Lieut., S. C.
Stewart, H. E., First Lieut., S. C.
Wyeth, L. J., First Lieut., S. C.
Jones, R. H., Second Lieut., S. C.
Newell, B. D., Second Lieut., S. C.
Schaefer, Frederick J., Second Lieut., S. C.

REFERENCES.

(1) Office order, S. G. O., September 20, 1917. On file, Record Room, S. G. O., 50882 (Old Files).

(2) Letter from the Surgeon General to The Adjutant General, April 21, 1917; first indorsement of The Adjutant General to the Surgeon General, May 11, 1917. On file, Record Room, S. G. O., 174912 (Old Files).

(3) Morning reports and civilian pay rolls. On file, Administrative Division, Hospital Fund and Pay Roll Section, S. G. O.

(4) Office Order No. 97, S. G. O., November 30, 1918, and Office Order No. 186, S. G. O., April 14, 1919. On file, Record Room, S. G. O., 024–1 (Administrative Division).

(5) G. O., No. 121, W. D., September 16, 1917.

(6) Book of Estimates, 1918. On file, Record Room, S. G. O., Confidential File.

(7) Estimate made from card records on file, Civilian Personnel, Medical Department at Large Section, S. G. O.

(8) Letter from The Adjutant General to the Surgeon General, December 5, 1918. On file, Record Room, S. G. O., Confidential File, 040.9.

(9) Memo. from the assistant and chief clerk of the War Department to the Surgeon General; first indorsement. W. D., S. G. O., to the Assistant Secretary of War, June 18, 1917. On file, Record Room, S. G. O., 46051(18) and 46051(23) (Old Files).

(10) Copy of leases between Acting Chief of Supply Division, War Department, and Bradley, Beall & Howard (Inc.) for building No. 1907 F Street NW. On file, Record Room, S. G. O., 46051(35) (Old Files).

(11) Memo. from the Surgeon General to the assistant and chief clerk of the War Department, October 20, 1917. On file, Record Room, S. G. O., Confidential File, 481 (Washington) (F).

(12) Memo. from the assistant and chief clerk of the War Department to the Surgeon General, May 16, 1917. On file, Record Room, S. G. O., 46051(13) (Old Files).

(13) Letter from the Surgeon General to the Quartermaster General, June 12, 1917. On file, Record Room, S. G. O., 46051(20) (Old Files).

(14) Memo. from the Surgeon General to the Assistant Secretary of War, January 10, 1918. On file, Record Room, S. G. O., Confidential File, 481 (Washington, D. C.) (F).

(15) Lease between Chief of Supply Division, War Department, and the Motor Co. (Inc.), of Washington, D. C., January 26, 1918. Copy filed, Record Room, S. G. O., 481. (Lease, Washington, D. C.) (F).

(16) Memo. from the Secretary of War to the assistant and chief clerk of the War Department, December 3, 1918. On file, Record Room, S. G. O., 024.1 (Office of the Surgeon General.)

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period April 7, 1917, to December 31, 1919, inclusive.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

CHAPTER III.

PERSONNEL DIVISION.

The creation of a Personnel Division, with a commissioned medical officer at its head—one of the Surgeon General's assistants—was effected by Maj. Gen. Robert M. O'Reilly soon after he became Surgeon General in 1902. The work of the division was carried out in three sections: Commissioned personnel, enlisted personnel, and Army Nurse Corps personnel. Contract surgeons and dental personnel were handled by the commissioned personnel section; and when the Veterinary Corps was established in 1916 and was made a part of the Medical Department, the officers of this new corps naturally gravitated to the section handling commissioned personnel.

The Personnel Division had in its charge all matters having to do with the Medical Department personnel. (See Chart III.) This included all administrative control of their appointment, promotion, and assignment to stations. Records concerning Medical Department personnel were centered in the Surgeon General's Office. While War Department orders affecting this personnel were and are issued by the Adjutant General's Office, this is a military formality, the recommendations which are responsible for such orders emanating from the Surgeon General. In peace times, all permanent changes of stations of Medical Department officers desired by the Surgeon General were made in this manner, except actual assignment to station overseas. Orders for assignment to duty overseas, however, originated with the Surgeon General.

With the greatly expanded duties imposed on the Surgeon General's Office by the war many of the previous functions of the Personnel Division became offshoots from the parent stem, which, however, continued to exist and to grow greatly with some new branches of its own.

On April 6, 1917, the organization of the personnel of the Medical Department of the Regular Army comprised a Surgeon General, a Medical Corps, a Medical Reserve Corps,[a] a Dental Corps, a Veterinary Corps, an enlisted force, the Nurse Corps, and contract surgeons.[1] The national defense act of June 3, 1916, which provided for these components of the Medical Department, also provided for the Regular Army Reserve, consisting of an enlisted force; the Officers' Reserve Corps, made up of sections corresponding to the various arms, staff corps, and departments of the Regular Army; and the Enlisted Reserve Corps. Contingent upon congressional authorization for the use of the armed forces of the United States, other than the Regular Army, the President was empowered by the same act of Congress to draft into military service of the United States any or all members of the National Guard and of the National Guard Reserve.

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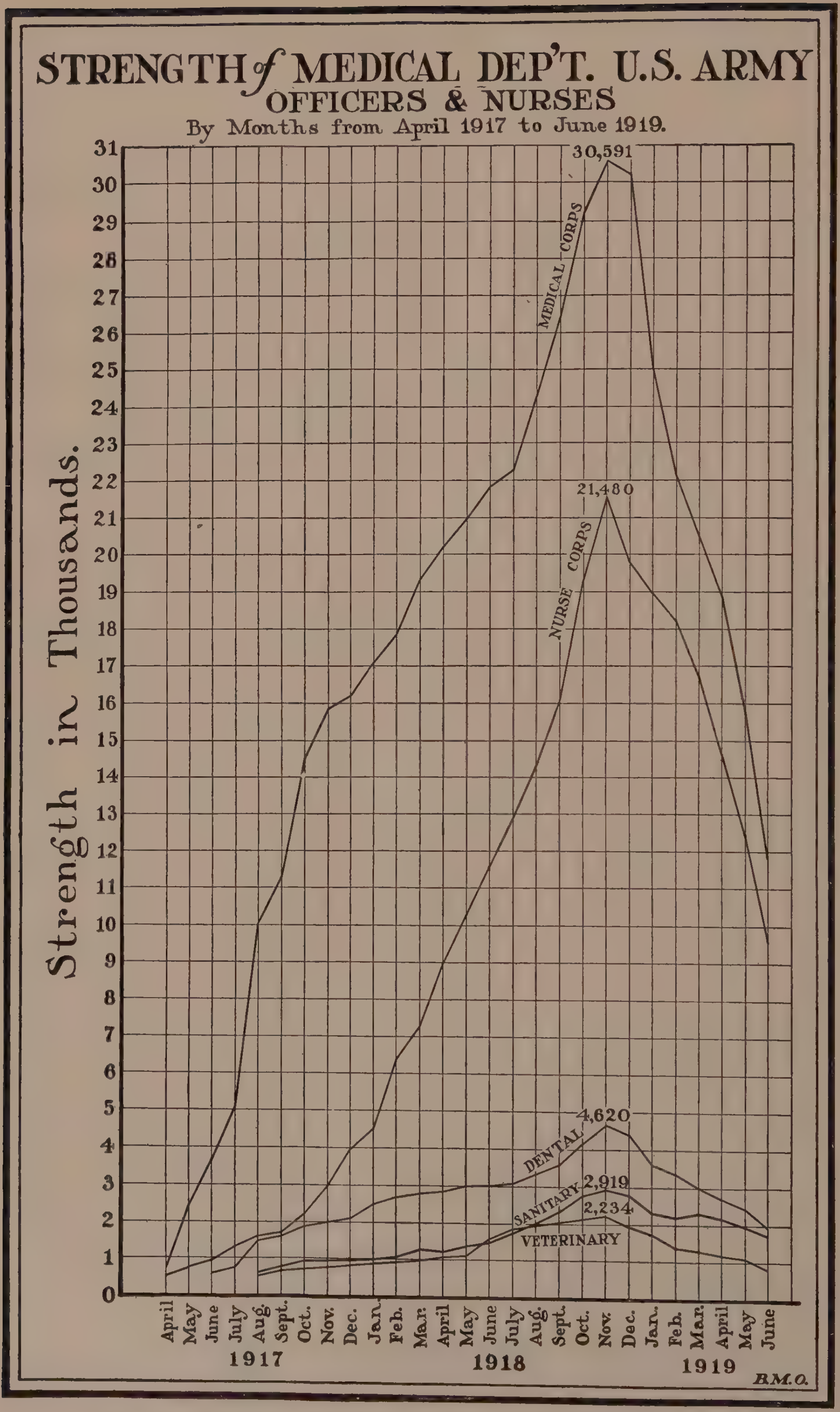
[a] The act of Congress approved June 3, 1916, provided also for the abolition of the Medical Reserve Corps, effective one year after the passage of the act, and the commissioning of its members in the Officers' Reserve Corps.



STRENGTH of MEDICAL DEP'T. U.S. ARMY
OFFICERS & NURSES
By Months from April 1917 to June 1919.

PLATE IX.—Prepared from Weekly Reports, Personnel Division, Surgeon General's Office.

The following tabulation exhibits the various classes of personnel provided the Medical Department by the act of Congress of June 3, 1916, both in active service and as potential forces in the event of war, and additional classes of personnel provided for from time to time during the emergency:

Officers:[b]
  Medical—
    Regular Army.
    National Guard.
    Reserve Corps.
    Contract surgeons.
  Dental—
    Regular Army.
    National Guard.
    Reserve Corps.
  Veterinary—
    Regular Army.
    National Guard.
    Reserve Corps.
  Sanitary Corps—
    United States Army (for the emergency).
  Ambulance Service—
    United States Army (for the emergency).
Enlisted:[c]
  Medical—
    Regular Army.
    Regular Army Reserve.
    Enlisted Reserve Corps.
    National Guard.
    National Reserve.
  Dental—
    Enlisted Reserve Corps.
  Veterinary—
    United States Army (for the emergency).
    Enlisted Reserve Corps.
  Sanitary Corps—
    United States Army (for the emergency).
  Ambulance Service—
    United States Army (for the emergency).
Nurses:
  Regular Army.
  Reserve (Red Cross).

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[b] Distinctive appellations for the land forces of the United States were discontinued by General Orders, No. 73, War Department, August 7, 1918.

[c] On October 1, 1918, all training detachments (which included the Medical Enlisted Reserve Corps) at educational institutions were designated parts of the Students' Army Training Corps, in accordance with General Orders, No. 94, War Department, October 19, 1918.

SECTION OF COMMISSIONED PERSONNEL.

REGULAR ARMY.

On April 6, 1917, there were on active duty in the Medical Department the following commissioned officers: [2]

Medical.[d]	Dental.	Veterinary.
491	86	62

[d] For regulations prescribed for appointments to the Medical Corps, see Appendix II (Art. I, Manual for the Medical Department).

On November 15, 1918, four days after the armistice was signed, the permanent officers of the Medical Department consisted of the following: [2]

Medical.	Dental.	Veterinary.
989	229	115

NATIONAL GUARD.

By the act of Congress of May 18, 1917, all members of the National Guard and all the National Guard Reserves were drafted into the military service of the United States. By the proclamation of the President on July 3, 1917, all organizations of the National Guard, to which Federal recognition had been extended by the Militia Bureau prior to midnight August 4, 1917, were actually called into Federal service August 5, 1917, with the exception of the officers of the State staff corps and departments, the National Guard Reserve, and the National Guard of Hawaii.[3] On August 5, 1917, the maximum strength allowed to National Guard organizations was 13,093 officers and 419,834 enlisted men.[4] The number called into Federal service on August 5 was slightly in excess of 12,000 officers and 367,223 enlisted men.[5] The following table shows the number of officers of the Medical Department who were called into the Federal service by this proclamation (August 5, 1917), who were appointed under the provisions of the act approved May 18, 1917, who were eligible for call but were not called, and who were eligible and qualified for appointment by the Militia Bureau subsequent to August 5, 1917.[6]

Grade.	Drafted Aug. 5, 1917.			Appointed under act May 18, 1917.			Not drafted Aug. 5, 1917.			Recognized since Aug. 5, 1917, for National Guard not in Federal service.			Total.
	Medical Corps.	Dental Corps.	Veterinary Corps.	Medical Corps.	Dental Corps.	Veterinary Corps.	Medical Corps.	Dental Corps.	Veterinary Corps.	Medical Corps.	Dental Corps.	Veterinary Corps.	
Colonel							2						2
Lieutenant colonel	8						1						9
Major	252			1			17			21			291
Captain	140			3			10						153
First lieutenant	846	249		17	1		100	38		44	10		1,305
Second lieutenant			73			1			10			14	98
Total	1,246	249	73	21	1	1	130	38	10	65	10	14	1,858

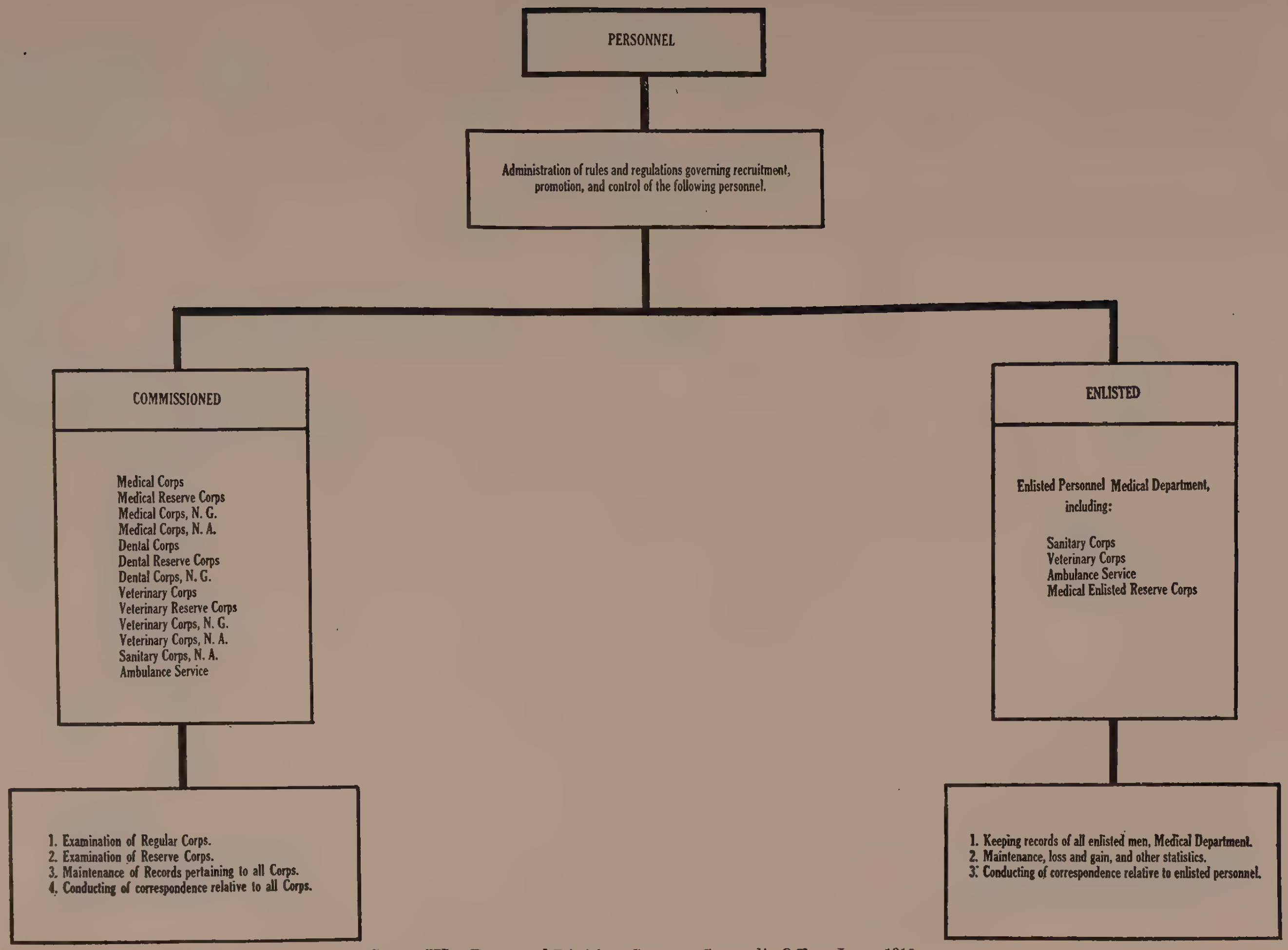
PERSONNEL
Administration of rules and regulations governing recruitment, promotion, and control of the following personnel.
COMMISSIONED
Medical Corps
Medical Reserve Corps
Medical Corps, N. G.
Medical Corps, N. A.
Dental Corps
Dental Reserve Corps
Dental Corps, N. G.
Veterinary Corps
Veterinary Reserve Corps
Veterinary Corps, N. G.
Veterinary Corps, N. A.
Sanitary Corps, N. A.
Ambulance Service
1. Examination of Regular Corps.
2. Examination of Reserve Corps.
3. Maintenance of Records pertaining to all Corps.
4. Conducting of correspondence relative to all Corps.
ENLISTED
Enlisted Personnel Medical Department, including:
Sanitary Corps
Veterinary Corps
Ambulance Service
Medical Enlisted Reserve Corps
1. Keeping records of all enlisted men, Medical Department.
2. Maintenance, loss and gain, and other statistics.
3. Conducting of correspondence relative to enlisted personnel.

CHART III.—Personnel Division, Surgeon General's Office, June, 1918.

Actually, there were inducted into the Federal service through the drafted National Guard 1,267 officers of the Medical Corps, 250 officers of the Dental Corps, and 74 officers of the Veterinary Corps, a total of 1,591 officers of the Medical Department, National Guard.[6]

MEDICAL OFFICERS' RESERVE CORPS.

Long before the war the Surgeon General's Office had maintained that in time of war medical officers would be required in the proportion of 10 officers to each 1,000 of the total strength of the Army. The war proved this estimate to be substantially correct for an Army of less than 2,000,000 men. For an Army larger than 2,000,000 the war has shown that the proportion of medical officers may be slightly reduced without detriment to the medical service. The original estimates of the War Department were for an Army of 2,000,000 men; consequently, the first goal of the Medical Department was to obtain a total of 20,000 medical officers.[7] As the General Staff, from time to time, enlarged its estimates regarding the size of the Army, it became necessary for the Surgeon General to rearrange his plans and to make ever-increasing demands upon the medical profession of the country. In order to mobilize this large commissioned personnel, it became necessary to carry out well-defined and systematic work in every section of the United States. Every agency which the Medical Department could employ was placed at the disposal of the Surgeon General. Each of these agencies performed service of inestimable value in awakening the profession to its obvious duty and in securing applications for commission as the Surgeon General needed the applicants. The American Medical Association, utilizing its coordinated bodies, the State medical societies, constituted itself into an effective organization to assist the Surgeon General in every way possible. The propaganda published in the *Journal of the American Medical Association* and the printing done for the Medical Department by that journal were of great importance and value. Credit is also due to other medical journals and to the American Medical Editors' Association for the use of space and editorials in placing the needs of the Medical Department before the profession. Practically all the leading medical societies of the country rendered assistance in this connection. The Medical Section of the Council of National Defense, through its chairman and its secretary, approached every physician in the United States with a personal appeal to forward his application as soon as he could arrange his affairs to accept active duty. This organization, through its State and county committees, classified the physicians of the various communities according to their availability for service, and carried on a campaign which brought the force of public opinion to bear in a most compelling manner upon those who showed a tendency to hold back.

With the officers of the Regular Establishment, including 342 officers of the Medical Reserve Corps[2] and the small number of medical officers of the National Guard drafted into the service of the United States as a nucleus, the great task confronting the Personnel Division at the outbreak of the war was that of filling immediately and as rapidly as possible the commissioned ranks of the Medical Department by inducing as many as possible of the qualified professional men of the country to enter the various sections of the Officers' Reserve Corps (Medical, Dental, and Veterinary).[f]

Examining boards were immediately appointed[8] in all of the principal cities and Army posts throughout the United States. Those in the cities consisted for the most part of officers of the Medical Reserve Corps on the inactive list and those at Army posts of officers of the Regular Establishment. The number of these boards was gradually increased until, in most parts of the country, candidates could be examined without traveling long distances. This was important, as under the law applicants had to pay their own expenses to and from the place of examination.

At first applicants were required to write the Surgeon General and obtain personal history blanks to be filled out and returned. The candidate's place of residence was then looked up on a map (with much difficulty when small towns were concerned), and he was invited to appear for examination before the board nearest his home. The personal history was forwarded to the board which was authorized to conduct the examination. This method proved time-consuming and unsatisfactory when large numbers of applications began to come in. Lists of the examining boards were then printed, giving the boards arranged by States. These lists were periodically revised and kept up to date. For their publication the Medical Department is indebted to the *Journal of the American Medical Association*. After the adoption of these lists, all applications for appointment were answered by sending the applicant a printed list of the boards and directing him to appear before any board he might select as convenient. The boards, in the meantime, were supplied with all necessary blank forms and with full instructions as to the eligibility of candidates and the method of conducting the examinations. This matter is here given in detail because the change in procedure was of the greatest importance in expediting examinations and appointments at a period when conditions confronting the Medical Department necessitated the greatest haste.

The following is a list of examining boards for the Medical Reserve Corps organized up to September 5, 1918:[8]

Alabama: Mobile, Montgomery.
Arizona: Douglas, Fort Huachuca, Naco.
Arkansas: Hot Springs, Little Rock, Texarkana.
California: Coronado, Los Angeles, San Diego, San Francisco.
Colorado: Denver, Fort Logan, Hotchkiss.
Connecticut: New Haven.
District of Columbia: Washington.
Florida: Jacksonville, Key West, Pensacola.
Georgia: Atlanta, Augusta, Fort Oglethorpe.
Idaho: Boise.
Illinois: Chicago, Rockford, Springfield.
Indiana: Indianapolis, Terre Haute.
Iowa: Des Moines, Fort Des Moines.
Kansas: Newton, Fort Riley, Fort Leavenworth, Topeka.
Kentucky: Bowling Green, Louisville.
Louisiana: Alexandria, Baton Rouge, New Orleans.
Maine: Brunswick, Fort Williams, Fort Preble.

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[f] The procurement of officers for the Dental Reserve Corps and the Veterinary Reserve Corps is described in the administrative histories of the respective divisions.

Maryland: Baltimore, Camp Meade.
Massachusetts: Boston, Fort Banks, Springfield.
Michigan: Ann Arbor, Battle Creek, Detroit, Menominee.
Minnesota: Fort Snelling, Minneapolis, Rochester.
Mississippi: Hattiesburg, Meridian, Jackson.
Missouri: Jefferson Barracks, Kansas City, Springfield, St. Louis.
Montana: Great Falls, Helena, Livingston.
Nebraska: Norfolk, Omaha.
New Hampshire: Hanover, Manchester, Nashua.
New Jersey: Atlantic City, Newark.
New Mexico: Deming, Fort Bayard.
New York: Albany, Buffalo, Plattsburg, New York, Syracuse, Rochester
North Carolina: Charlotte, Fort Caswell, Waynesville.
North Dakota: Fargo.
Ohio: Cincinnati, Cleveland, Columbus, Dayton, Fairfield, Toledo.
Oklahoma: Fort Sill, Oklahoma City.
Pennsylvania: Allentown, Harrisburg, Philadelphia, Pittsburgh.
Rhode Island: Providence, Westerly.
South Carolina: Charleston, Columbia, Fort Moultrie, Spartanburg.
South Dakota: Flandreau, Sturgis.
Tennessee: Knoxville, Memphis, Nashville.
Texas: Austin, El Paso, Galveston, Fort Worth, Houston, San Antonio.
Utah: Fort Douglas, Ogden, Salt Lake City.
Vermont: Fort Ethan Allen.
Virginia: Fort Monroe, Norfolk, Richmond, Roanoke.
Washington: American Lake, Spokane, Vancouver.
West Virginia: Charleston, Huntington, Morgantown, Wheeling.
Wisconsin: Ashland, Milwaukee, Waupun.
Alaska: Fort Gibbon.
Porto Rico: San Juan.
Hawaii: Honolulu.
Philippine Islands: Manila.
Canal Zone: Ancon.

In addition to these medical boards, the surgeon at any Army post or camp had authority to conduct the examination of applicants for commissions in the Medical Reserve Corps.

The requirements for appointment and the scope of the examination are shown by the following circular:[9]

The requirements for appointment are that the applicant be a citizen of the United States, between 22 and 55 years of age, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine; he must have qualified to practice medicine in the State in which he resides, and be in the active practice of his profession.

The examination is physical and professional; the professional examination is oral. In case the oral examination is not satisfactory to the board, the applicant will be given a written examination. In all cases the examination will be in the following subjects:

1. Practice of medicine, including etiology, clinical description, pathology, and the treatment of diseases.
2. Surgery principles and practice.
3. Obstetrics and gynecology.
4. Hygiene—personal and general, especially as to the prophylaxis of the more prevalent epidemic diseases. Specialists will be examined in their specialty.

When a candidate reports to the board for examination, he should submit the following:

1. His personal-history blank properly filled in as indicated therein and certified to before a notary public.
2. Two testimonials from reputable persons as to his citizenship, character, and habits.
3. A certified copy of his license to practice medicine in the State in which he resides.

The act of June 3, 1916, creating the Medical Reserve Corps section of the Army, provides that in time of peace only those of the grade of first lieutenant may be ordered to active duty, and this with their own consent, but in time of war the services of officers of all grades are at the disposal of the Government.

The pay of officers in the Medical Reserve Corps is the same as that of corresponding grades in the Regular Army.

The more important instructions furnished examining boards are shown in the following circular letters from the Surgeon General's Office.[10]

(*a*) *To the presidents of all boards for the examination of applicants for the Medical Reserve Corps.*

1. You are notified that hereafter it will be the policy of this office, when tender of services is received from physicians throughout the country, to direct them to communicate with you in order to arrange a mutually agreeable date for examination, this examination to be conducted without further reference to this office.

2. When the examination is completed and the papers are forwarded to this office, care should be taken that they are accompanied by the necessary testimonials and by the personal history correctly filled out and sworn to before a notary public.

3. If on the physical examination the applicant is found disqualified, the professional examination need not be proceeded with.

4. Examiners should provide themselves, by requisition on this office, with a sufficient number of blanks (138, 149, and 150, S. G. O.), so that there will be no delay in the examination of those referred to them.

(*b*) *Instructions governing the examination of applicants for the Medical Reserve Corps.*

(To supersede all previous instructions.)

1. Examinations should only be conducted by commissioned officers appointed by this office, except that presidents of regularly appointed boards are authorized to request and accept assistance of other Medical Reserve officers.

2. Properly constituted boards are authorized to conduct the examinations without reference to the Surgeon General's Office. The requisites for appointment are as follows: The applicant must be a reputable physician (doctor of medicine), in good standing in his community, in the active practice of his profession, licensed to practice medicine in the State in which he resides, between 22 and 55 years of age, a citizen of the United States (first papers not sufficient), and physically and professionally qualified. Members of the National Guard are not eligible.

3. The examination proper is physical and professional.

The physical requirements are stated in G. O. 66, 1910, and Circular No. 2, A. G. O., 1916, forwarded to each board. The visual requirements are that the applicant have not less than 20/100 vision in each eye, fully correctible by glasses. If the applicant is found physically disqualified, the professional examination need not be proceeded with.

The professional examination is oral, but in case the oral examination is not satisfactory to the board, the applicant will be given a written examination. In this case his papers should be marked by the board and then forwarded with all other papers in the case to the Surgeon General's Office. In either case, the examination will be in the following subjects: (*a*) Practice of medicine, including etiology, clinical description, pathology, and the treatment of diseases; (*b*) surgery, principles and practice; (*c*) obstetrics and gynecology; (*d*) hygiene, personal and general, especially as to the prophylaxis of the more prevalent epidemic diseases.

Specialists will be examined in their specialty.

4. The papers in each case should be completed before being forwarded to the Surgeon General's Office. A complete set of papers includes the following:

(*a*) Personal history properly filled out and sworn to before a notary public (Form 149).

(*b*) Two testimonials as to citizenship, character, and habits.

(*c*) Physical examination report (Form 138).

(*d*) Report of the board as to qualifications of applicant (Form 150).

(*e*) Certificate of license to practice medicine in the State in which the applicant resides.

(*f*) Documentary evidence of citizenship if of foreign birth. Instead of including (*e*) and (*f*) with the papers, they may be simply presented to the board for its inspection, *providing that the board makes notation on Form 150 that they have been so exhibited.*

5. In all cases the signatures of the members of the board should show their rank and office.

6. Under "Remarks" on Form 150, the board should state grade in which it considers applicant should be commissioned. This information should not be given to the applicant.

7. Examiners should provide themselves by requisition on this office, with a sufficient number of blanks (138, 149, and 150, S. G. O.), so that there will be no delay in the examination of those referred to them.

MAY 25, 1917.

(c) *General information for examination boards.*

The following information is furnished in order that examining boards may be in a position to answer as many as possible of the questions so frequently asked by applicants for appointment in the Medical Reserve Corps:

1. The fact that a man has been drafted does not impair his eligibility for appointment to a commissioned grade. Such men may, therefore, be examined without regard to the fact that they have been drafted. They can claim no exemption until thay have received and accepted their commissions, and the department is not yet in receipt of information as to exact time when such men will be released from their obligations under the draft. Such release may not occur until after arrival at the mobilization camp.

2. It is useless for men who have been caught in the draft to wire and write this office to expedite their commissions in order that they may be in receipt of the latter before being called to the colors. There are so many of these cases that the appointments will have to take their normal course and inquiry should only be made in case the commission is not received within a reasonable time, say two weeks after the date of the letter from this office notifying the applicant that he has been found qualified.

3. Applicants within the draft age who are given commissions will not, under any circumstances, be given any promise that they will be left on the inactive list to finish hospital interneships or for any other purpose whatever. To take any other course would place the department in the position of endeavoring to circumvent the draft law.

4. Women physicians are not eligible for appointment in the Medical Reserve Corps and should not be examined.

5. In spite of the regulations laid down in Circular G, "Instructions Governing the Examination of Applicants for the Medical Reserve Corps," some boards are making examinations for appointment in the Medical Reserve Corps of men who do not possess the degree of Doctor of Medicine. This procedure is a waste of time and leads to considerable embarrassment on the part of the department.

6. Appointments in the Sanitary Corps are made only when the department has in mind some definite place to which the applicant is to be assigned as soon as commissioned. Applications for this corps should not, therefore, be encouraged, and no one should be examined for appointment without definite instructions in each case from this office.

7. The department spends much time answering requests for active duty from men who have not received or accepted their commissions. The department can take no action in such cases and is not in a position to make a notation of the individual's wishes that will come to attention when he does accept his commission. Therefore, applicants awaiting commissions should be directed to make their request for active duty at the time they accept their commissions.

8. Applicants known to the examining board to have been previously examined and rejected by some other board should not be reexamined without special authority from this office. The department will be compelled to disregard all such reexaminations unless made under the conditions stated.

9. If the papers of an applicant are referred to an examining board and the applicant himself, after due notice, fails to appear for examination within a reasonable time thereafter, the papers should be returned to this office with a statement of the facts. This is necessary in order that, when inquiry is made in regard to the applicant's status, the department may be in a position to answer questions intelligently.

10. The department is continually being called upon to discharge officers of the Reserve Corps because of physical defects which were not noted at the time of their original examination for appointment. It will thus be seen that carelessness in making physical examinations leads to unnecessary expense to the Government and great inconvenience and hardship to the applicants themselves.

SEPTEMBER 1, 1917.

(d) *Instructions to presidents of examining boards.*

1. In view of the recent rulings relative to the commission of applicants in the Medical Reserve Corps, you are advised that in conducting the examination of all applicants the following information must be furnished:

(*a*) Commissioned officers of State military organizations must furnish evidence that their resignations will be accepted by the State adjutant of the organizations to which they belong in the event of their appointment in the Federal service. This evidence must be furnished to the board by the applicant at the time of his examination and must be attached to the file of the application before being forwarded to the Surgeon General.

(*b*) In case of applicants who are now employed by any of the executive departments of the Government, or independent Government establishments of the executive service, the applicant must present with his application the written approval of the head of the executive department or independent establishment under whom the applicant is now serving. This written approval must be attached to the file of his application and forwarded to this office.

(*c*) The boards will require all applicants for a commission in the Medical Reserve Corps to certify whether or not they have been rejected for a commission in any branch of the military service, or whether or not they have any application for a commission pending. This certificate may be made in the form of a notation on the face of the report of the examination, properly initialed by the board of examiners, or may be in the form of a written statement over the signature of the applicant, in which event it should be attached to the application papers and forwarded with them.

2. The boards will take particular notice to record on form 150 the age and place of birth of the applicant and will see that the same information is properly recorded in the proper place upon the personal history to which the applicant has made affidavit.

3. In case of foreign-born applicants the applicant must furnish, if naturalized, documentary evidence of such naturalization. Applicants who were born in countries with which the United States is now at war or any country allied to such countries will not be eligible for a commission in the Medical Reserve Corps except in the event that they were brought to this country before they had reached the age of 5 years. If such is the case, the applicant must furnish satisfactory evidence of this fact in the form of a sworn statement by parents, relatives, or other persons who have full knowledge of the facts, and such affidavits must be attached to the file of the application. When it is received by the Surgeon General proper steps will be taken to ascertain whether the applicant is eligible for a commission.

4. The boards will, in the case of every applicant who appears before them, complete full examination, both professional and physical, and will determine, so far as possible, the moral qualifications of each applicant. The completed file should be forwarded to the Surgeon General in every case in order that the Surgeon General may exercise his discretion in recommending or rejecting any applicant for a commission, this instead of the instructions formerly issued that where an applicant has been found either physically, professionally, or morally disqualified, the examination should not be proceeded with.

5. In general the physical qualifications for applicants for a commission in the Medical Reserve Corps will follow the physical requirements for "general military service" as outlined under Special Regulations 65 (copy herewith), except that active venereal disease of any description will be a cause for rejection. The standards for vision and hearing will conform very closely to those outlined in these regulations. Color blindness need not be considered cause for rejection. All physical defects should be carefully enumerated, however minor in degree, and the opinion of the board should be expressed as to whether or not any single physical disability should disqualify, or whether the total of the minor physical disabilities are such as to warrant the rejection of the applicant.

6. The attention of the boards is invited to the fact that the professional examination should be conducted in such a manner as to enable the boards to express a definite opinion as to the professional qualifications of each applicant, and in all cases of doubt the boards should submit the applicant to a written professional examination covered by questions which will be furnished by this office on application.

7. The Surgeon General desires an expression of opinion on the part of examining boards as to the professional and other qualifications or disqualifications of each applicant. The boards should make these expressions confidential and should not communicate them to the applicants. The Surgeon General further desires the benefit of the board's opinion as to the rank in which the appli-

cant should be recommended in view of his age, professional qualifications, and previous military experience, if any.

8. Applicants for a commission in the Medical Reserve Corps appearing before examining boards for reexamination should present to the boards a letter from this office granting authority to have their reexamination conducted. This letter will outline the cause for the rejection of the previous application and advise the boards as to what defects were exhibited by the applicant upon the occasion of his former examination. The boards should not conduct the reexamination of any applicant unless such letter is presented. This letter may instruct the applicant to report to a particular board or to "the board of examiners nearest his home." In either case the letter will be sufficient authority for the board to which it is presented to conduct the reexamination.

9. The Surgeon General is giving consideration to the desirability of commissioning specially well-qualified professional men for duty at base and general hospitals in this country, and who are specialists in their particular line of medicine or surgery, up to the age of 57 years. These applicants will be specially selected with a view of assigning them to duty on the permanent staffs of base or general hospitals in this country, or to such other assignment as the interests of the service may require. When applicants above 55 and under 57 years of age appear before the boards the boards are authorized to conduct their examinations, and in the event that they present no major physical disqualifications consideration will be given this application for commission. The examining boards should carefully explain to the applicant that the application will be referred to the proper section of the Surgeon General's Office for approval, and that in the event such approval is given favorable consideration will be taken and the applicant will be recommended for a commission.

10. The boards, in recommending the rejection of any applicant, should state specifically the causes for such rejection. If it is for reason of moral delinquency, the boards should furnish the Surgeon General with full information as to the character of such delinquency. If the rejection is for physical or other reasons, the boards should specifically state this fact and give as much detail as may be necessary to enable the Surgeon General to arrive at a definite conclusion. Lack of professional qualifications should be definitely stated, and in every case where the applicant is submitted to a written examination the boards will review and grade all answers and forward the papers to the Surgeon General with their recommendation. Boards may, in their discretion, submit an applicant who is a graduate of a school the rating of which is low to a written professional examination if the applicant is within the draft age. If he is successful in passing the written professional examination the boards should so state and make appropriate recommendation.

The question of citizenship gave much trouble and several appointments of noncitizens were made. These commissions had to be revoked, such appointments in the Medical Reserve Corps being illegal.[11] These errors occurred because applicants in their personal histories sometimes made oath that they were naturalized citizens when declarations of intention only had been made. This led to the requirement that documentary evidence of citizenship be furnished:[12]

DECEMBER 4, 1917.

From: The Adjutant General of the Army.
To:
Subject: Citizenship of applicants for Officers' Reserve Corps.

1. Hereafter applicants for commissions who are not native American citizens will state in their application how, when, and where they acquired citizenship of the United States. If they are naturalized citizens, their naturalization certificates or certified copies thereof will accompany their papers to this office. If they claim citizenship through the naturalization of parents, the naturalization certificates in question will be submitted with the applications. In cases where the certificates are not available, the dates and places of naturalization of the persons through whom citizenship is claimed will be stated in order that proper verification may be made.

2. In each case, without exception, applicants of the kind indicated will make affidavit of how long they have resided in the United States, giving places and dates and what their ties of family and property are with this country. They should make similar statement respecting the country wherein they were born or in which they have resided abroad.

3. In cases where applicants allege birth in the United States and any doubt arises as to correctness of statement, birth certificates should be submitted. If birth certificates are not procurable, certified statement by at least two reputable citizens who know the applicant was born in the United States should be submitted.

4. All officers concerned with the foregoing will make careful scrutiny in order to ascertain whether applicants are bona fide citizens and thoroughly loyal to the United States before submitting applications to this office.

By order of the Secretary of War:

......................................,
Adjutant General.

The War Department made several different rulings regarding the appointment of naturalized citizens born in enemy country. At first there were no restrictions on such appointments, but on January 4, 1918, a memorandum was issued by the Chief of Staff[13] forbidding the commissioning and assignment of men born in a country with which we were at war. In a case submitted on April 22, 1918, in which the Surgeon General's Office stated that an investigation by the Intelligence Branch of the General Staff developed nothing reflecting upon the loyalty of the applicant, the papers were returned, by direction of the Secretary of War, with the statement that it was the intention that no exception be made to the policy announced in the above memorandum even when evidence of undoubted loyalty existed.[14] Again, on May 18, a case came up in which the individual, a graduate in medicine, had been drafted under the selective-service law. This case was forwarded to the War Department by indorsement as follows:[15]

> The department is not ready to make any recommendation that would have general application to cases similar to the one discussed in this communication, but requests a decision as to the policy that will be followed in the case of well-qualified professional men called to service under the provisions of the selective-service law, but who because of being born in enemy country are not eligible for commission. It would appear that such individuals, if disloyal, would accomplish as much harm as enlisted men as they might do if commissioned.

The papers in this case were returned to the Surgeon General indorsed as follows:[16] "Applications for commission from naturalized citizens born in enemy country will not be considered."

On June 24, 1918, the above policy was modified so as to permit the appointment of enemy-born applicants, provided they had emigrated to the United States prior to the age of 5 years, were of approved loyalty (shown by investigation of the Intelligence Division, General Staff), and were American citizens through their own naturalization or through that of their parents.[17] The Army appropriation bill approved July 9, 1918, provided that American citizens who were of Austrian or German birth, or who were born in alien territory, who had passed the necessary examination and whose loyalty was unquestioned, might, in the discretion of the Commander in Chief of the Army and Navy, be commissioned in the United States Army or Navy. While this provision did not change the power previously conferred on the Commander in Chief of the Army in regard to commissioning men of this class, it led to the removal of all restrictions on their appointment provided they were shown to be of unquestioned loyalty.

For appointment in the National Army, citizenship was not required by law but was made obligatory by order of the Secretary of War, and the instructions were conveyed to the Surgeon General in a letter from The Adjutant General, dated January 23, 1918.[18]

In May, 1918, a bill, passed by Congress and approved by the President, provided for the expeditious naturalization of all aliens in the military service, including enemy aliens producing satisfactory evidence of loyalty.[19] This bill provided relief for a number of young professional men who, having made a declaration of intention, were subject to draft, but not having become full citizens were ineligible for commission.

It was common during the war for members of State boards of health, and physicians connected with institutions of a more or less public character or who, in their opinion, were essential to local communities, to request commission in the Medical Reserve Corps as a protection against the draft, and then to ask to be left on the inactive list. These applications were invariably refused and the applicants informed that they should seek protection under section 80, Selective-Service Regulations, which provided for deferred classification of those engaged in institutional and public-health service.

During the early months of the war applicants for commission in the Medical Reserve Corps were refused unless they met the physical standards laid down prior to the war for the examination of recruits, except that moderate errors of refraction were not considered disqualifying. As the war progressed and the need increased of making greater and greater demands upon the medical profession, the physical requirements were modified from time to time and always in the direction of liberality. Finally, examining boards were directed to accept applicants with special professional qualifications, provided they had no physical defects or constitutional disease which shortened their expectation of life. This plan placed at the disposal of the Medical Department many qualified physicians who would otherwise have been rejected. Yet applicants for commission who, during their first enthusiasm, made light of their physical defects, later on, when their ardor had somewhat subsided, offered these same defects as a reason for demanding release from service. The acceptance of physically substandard applicants resulted also in a great increase in claims upon the Government for compensation.

The information desired by the Adjutant General from the Surgeon General when recommendations for commission were forwarded is covered by the following letter:[20]

MAY 7, 1918.

From: The Adjutant General of the Army.
To: The Surgeon General of the Army.
Subject: Applications for commissions in the several staff corps.

1. In order to comply fully with the law and regulations governing appointments in the Officers' Reserve and National Army, you will furnish this office, when submitting applications for appointment, data concerning each applicant as follows:

(*a*) Name in full.

(*b*) Address where applicant is to be notified of appointment and home address.

(*c*) Date and place of birth.

(*d*) Citizenship. If naturalized, documentary proof thereof. (See letter, December 4, 1917.)

(*e*) Detailed report of physical examination by a medical officer.

(*f*) If enlisted man (1) date of enlistment, (2) when ordered to active duty, (3) the recommendation of his commanding officer and commanding general.

(*g*) If subject to the selective-service law, (1) result of his classification showing class and division of class, (2) evidence as to whether or not he is in the current quota of his local board, (3) certificate that there is not available an equally suitable man outside the draft age, (4) a statement as to where it is contemplated to assign him to duty.

(*h*) Certificate that no officer now holding commission on staff corps concerned on the active or inactive list is available for the position.

(*i*) Duties to be performed when commissioned.

(*j*) Special reference to general orders or approved staff memorandum authorizing appointments in the branch for which applicant is a candidate, with tabulated statement showing the number authorized and the vacancies existing in the grade for which candidate is recommended.

(*k*) Letters of recommendation from reputable citizens.

(*l*) Present occupation and remuneration; also, former employment. Education, including degrees, if any.

(*m*) Commissioned officers of State military organizations must furnish evidence that their resignations will be accepted by the State adjutant of the organizations to which they belong in the event of their appointment in the Federal service.

(*n*) Evidence as to whether the applicant has been rejected for commission in any branch of the military service or has another application for commission pending.

2. The original of the record of examination will be forwarded to this office with the application for the permanent files.

3. No application from any employee under the executive departments of the Government, or independent Government establishments of the executive service, will be approved unless such application is accompanied by the written approval of the head of the executive department or independent establishment under which the employee is serving.

4. Railroad employees may be examined for commissions if their applications are accompanied by the written consent of the present or executive officer of any railroad under the jurisdiction of the United States Railroad Administration and under whom the applicant in question is serving, but will not be commissioned until approved by the Director General of the Railroads. (See letter, May 2, 1918.)

5. Other pertinent and still applicable instructions issued by this office are effective and compliance therewith is directed.

(Subparagraphs (*g*), (*h*), (*i*), (*k*), and (*l*) of paragraph 1 were not enforced with applicants for the Medical, Dental, or Veterinary Corps, but were insisted upon when the recommendation was for an appointment in the Sanitary Corps or in the Ambulance Service).

CONTRACT SURGEONS.

Long before the World War the Surgeon General of the Army, with the approval of the Secretary of War, was authorized, in emergencies, to appoint as many contract surgeons (civilian physicians employed under contract) as might be necessary,[21] subject to annual appropriation acts. Under this authorization many contracts were entered into with civilian physicians, for service with troops, to augment the personnel of the Medical Corps. With the creation of the Medical Reserve Corps in 1908,[22] however, contract surgeons were thereafter employed only at places which did not justify the expense involved by the detail of a medical officer; and many contract surgeons who had been employed accepted commissions in the Medical Reserve Corps and were placed on active duty. Thus when we entered the war only nine men were serving as contract surgeons. This number was increased by November 15, 1918, to 889.[2]

On August 13, 1917, the Judge Advocate General interpreted the statute authorizing the appointment of contract surgeons as applicable to women physicians, and "that in the absence of any statutory restriction prohibiting it, the Surgeon General, with the approval of the Secretary of War, may appoint female physicians as contract surgeons under authority of the statute above cited."[23] Accordingly, women were appointed as contract surgeons to serve as anesthetists, laboratory technicians, dispensary physicians, and in other capacities as needed. On October 27, 1918, or just before the armistice, 55 women were enrolled as contract surgeons. They were authorized to wear a khaki uniform made according to specifications approved by the Acting Surgeon General October 8, 1918.[24]

SANITARY CORPS.

Very soon after the beginning of the war, it became apparent that the Medical Department would require a considerable number of officers who were neither doctors of medicine, dentists, nor veterinarians. Authority was therefore obtained for the organization of what, for want of a better name, was called the Sanitary Corps.[25] Sanitary engineers, psychologists, chemists, laboratory technicians, office experts, adjutants, epidemiologists, mess officers, etc., represented the classes commissioned in this corps.

At the conclusion of hostilities there were 2,895 officers in the Sanitary Corps, distributed as follows: [26]

Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieutenants.	Second lieutenants.
1	3	69	495	1,080	1,245

UNITED STATES ARMY AMBULANCE SERVICE.

The United States Army Ambulance Service was created on June 23, 1917,[27] at the request of the French Government, through its representative, Field Marshall Joffre, to partly take over the field ambulance work of the Army on the French front.

Two officers of the Regular Army Medical Corps were assigned to the Ambulance Service to perfect its organization. At first the source of officers for the various sections of the service was the Medical Section, Officers' Reserve Corps. These latter were gradually replaced by men promoted from the ranks of the Ambulance Service and given commissions in that service. At the time when the armistice was signed there were very few medical officers on duty with the Ambulance Service.

The authorized number of officers for the Ambulance Service was 214; [28] the maximum number of officers serving with it during the war period was 209.[29]

VOLUNTEER MEDICAL SERVICE CORPS.

It was believed that if the war had not come to an end when it did, eliminating the need for further calls upon the medical profession, the question of protecting the absolute necessities of industry, rural communities, State health boards, and teaching institutions, would have assumed a transcendent importance. The whole profession, of necessity, would have been organized, classified, and given a military or quasi-military status in order that assignments of physicans unfit for strictly military duty could be made in such a way as to protect the interests named. The Surgeon General's Office had no machinery for the execution of such a plan, but this work was undertaken by the Council of National Defense in the organization of the Volunteer Medical Service Corps.[31] As this organization did not have a definite military status, its history will not be included here.

COMMISSIONS.

At the beginning of the war commissions of three types were issued to medical officers, viz, Regular Army, National Guard, and Medical Reserve Corps. At this period the grade of major was the highest in which officers of the Medical Reserve Corps could be legally commissioned. When it became necessary to appoint temporary officers to higher grades than that of major, or to give temporary advanced rank to officers of the permanent establishment, their appointments were made in the National Army. With the passage of the appropriation bill for the fiscal year 1918–19, the grades of lieutenant colonel and colonel, Medical Reserve Corps, were authorized.[30] For about two weeks thereafter, or until August 7, 1918, all appointments and promotions of temporary medical officers were made in the Medical Reserve Corps. On August 7, 1918, the War Department, by issue of General Orders, No. 73, eliminated all distinction between officers commissioned in the several subdivisions of the Army authorized by Congress, and decreed that thereafter all officers held commissions in the Army of the United States, permanent, temporary, or provisional.

Determining the grade to be given officers of the Medical Corps on original appointment was one of the most trying and perplexing problems confronting the Surgeon General's Office during the war. The proposal was frequently made, and from various sources, that all original appointments should be made in the grade of first lieutenant, and that promotions should be made only after the officers concerned had had opportunity to demonstrate their adaptability to military service and their value to the Government. This plan would have greatly simplified the administration of the Personnel Division, would undoubtedly have relieved the department of a good many embarrassments, and would have proved more satisfactory to division and camp surgeons, who objected to having lieutenants, whom they had trained, displaced by captains and majors appointed directly from civil life. If it had been possible to overcome all other obstacles, however, the plan would have proved impracticable on economic grounds alone.

In the summer of 1917 it was determined that no applicant under 35 years of age should be given an original commission carrying rank above that of first lieutenant unless he had had previous military experience of sufficient value to justify that an exception be made.[31] This plan was consistently followed during the whole future course of the war. Not more than half a dozen exceptions were made and these for reasons which appeared good at the time. For applicants beyond 35 years of age no definite rules regarding grades seemed to stand the test of experience. For a short time all officers over 45 years of age were commissioned as captains or majors, but the results were not satisfactory and the plan was abandoned. Thereafter the decision as to grade was made by the officer in the Surgeon General's Office who examined the applicant's papers, his opinion being based on the recommendation made by the examining board, and on the applicant's age, professional standing and professional training, as shown by his personal history and other papers submitted with his application. In many cases the papers presented misled the examining officers, and mistakes were inevitable. The immense volume of work and the tremendous tension under which the officers in the Surgeon General's Office were working also contributed to this result. Time did not permit the careful investigation that would ordinarily be made before any individual is clothed with the authority, influence, and responsibility implied by a commission in the Medical Corps.

At first doubtful cases, and finally all cases, were submitted to the American Medical Association for the purpose of ascertaining whether the files of the association contained anything derogatory to the applicants. By this procedure many quacks, abortionists, drug addicts, and other undesirables were excluded. Another agency of great assistance to the Personnel Division was an advisory board of Medical Reserve officers[g] appointed by the Surgeon General.[32] In cases when the reviewing officer was in doubt as to the grade to be given an applicant, especially if the decision was to be made between the grades of captain and major, all cases in which the professional ethics or moral character of the applicant was in doubt, and important cases in which an attempt had been made to use political influence, were referred to this board for advice. The names of the members of his board carried so much weight that it was difficult for applicants or their friends to go behind their decisions. Contrary to the prevalent opinion, political or other outside influences had practically no effect upon the offering of given grades to individual applicants. Very exceptionally a Member of Congress or some other friend would present undoubted evidence of the professional standing of an applicant that would not otherwise have come to the department's attention. In such cases the new facts presented, not the influence, changed the decision. It is notable that in not a single instance did the President or the Secretary of War attempt to influence the Surgeon General in regard to the grade recommended for any applicant.

In October, 1917, when the strength of the Medical Corps was only a little over 14,000,[2] all appointments in the Medical Reserve Corps were discontinued by direction of the Secretary of War. On October 16, 1917, a number of recommendations for appointments were returned with the following indorsement:[33]

> The Secretary of War has given personal consideration to these applications and directs them to be returned with the information that he has directed that no further commissions be issued except to fill vacancies in existing organizations, line or staff, or in one which may have to be created to perform some absolutely necessary function in the prosecution of the war. He therefore disapproves the attached requests for commission.

Under date of October 19, 1917, a second lot of recommendations was returned with the following indorsement:[33]

> The Secretary of War directs that the attached applications for commissions be returned to the Surgeon General with the information that the records show 20,600 officers are at present holding commissions in the Medical Corps and Medical Reserve Corps only.

When this action was taken by the Secretary of War there were only 14,137 officers in the Medical Corps.[2] In consequence of this action, the idea became general in the profession and throughout the country that a sufficient number of medical officers had been commissioned to meet the requirements of the service. This impression continued until November 26, 1917.

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[g] Advisory Board: Col. William H. Welch, M. C.; Col. Victor C. Vaughan, M. C.; Brig. Gen. J. M. T. Finney, M. D.; Col. William H. Mayo, M. C.; Col. Charles Mayo, M. C.; Col. George H. Simmons M. C.; and Col. Franklin Martin, M. C.

Again, on August 14, 1918, a memorandum from The Adjutant General stopped all commissions to men from civil life, including the medical profession.[34] This memorandum was immediately modified by letter from The Adjutant General.[35] The new regulations provided that all applicants between the ages of 18 and 45 years placed in Class I by local boards be inducted into service as enlisted men before being commissioned. At the request of the Surgeon General, these regulations were again modified,[36] excluding from their provisions applicants for commissions in the various branches of the Medical Department, with the exception of the Sanitary Corps. But for a second time the idea went abroad that the Medical Department had a sufficient number of medical officers to meet its expected needs. It was with difficulty that this impression was overcome and the medical profession of the country convinced that the needs of the Medical Department were still unsatisfied.

Of the total strength of the Medical Corps at the time of the armistice, 29,299 officers were commissioned directly from civil life. The remainder belonged to either the Regular Army or had come into the Federal service through the National Guard. To secure this force of 29,299 officers, 35,853 applications had been considered. Of these applicants approximately 4,000 were refused appointment as professionally, morally, or physically disqualified, and approximately 2,500 were appointed but discharged prior to the armistice, because of physical disability not reported by the original examiners, distress in their families, or community need, or as the result of professional incapacity or moral delinquency. The exact figures follow:[37]

In service direct from civil life November 11, 1918	29, 299
Discharged prior to November 11, 1918	2, 500
Rejected on original examination	4, 054
Total examined	35, 853

PROMOTION.

Promotion was a burning question throughout the war among officers holding temporary commissions in the Medical Corps. While conservatism of the Medical Department in making original appointments and the unprecedented expansion in the size of the Army insured a rapid flow of promotion amongst officers originally appointed in the lower grades, advancement in grade finally became an obsession with many officers.

In the United States, in the early months of the war, promotions were sometimes made on the direct recommendations of chiefs of divisions in the Surgeon General's Office, or based upon information obtained by the Personnel Division from other sources. Experience proved that this plan was unwise. The decision was therefore made, and adhered to throughout the war, that promotion of officers would be based entirely on the recommendations of local commanding officers. The following circular of instructions was issued to carry this plan into execution:[38]

1. Individual applications for promotion of officers of the Medical Corps will be disapproved unless the applicant has no immediate commanding officer. At such intervals as you think advis-

able, recommendations should be submitted for the promotion of deserving officers to fill existing vacancies. If you consider an examination on professional and military subjects necessary to enable you to arrive at proper conclusions in making your recommendations, such examination may be prescribed. The reports of these examinations should not, however, be forwarded to this office, as the department, in making its recommendations to the Secretary of War, will be governed largely by the recommendations submitted by the candidates' superior officer.

2. There are a number of officers in the Medical Department over 35 years of age and well qualified professionally who were given original commissions in the grade of first lieutenant because the department did not have sufficient information concerning them to make it safe to give them original appointments in a higher grade. Such men should be considered as eligible for promotion to a captaincy after they had been on active duty sufficiently long to demonstrate their adaptability to military service and their usefulness to the Government. Recommendations for the advancement of such officers will be entertained after a minimum of three months' active service.

3. Recommendations for promotion to field rank should only be made if there is a position vacant under your jurisdiction which ordinarily carries that grade and after the individual has been thoroughly tried out and you are assured that he is fully capable of filling the position.

4. All recommendations for the promotion of officers should be forwarded through channels of Form CCP-1152, as provided in G. O., No. 85, W. D., 1918, and the officer initiating the promotion should be guided by the policy outlined in G. O., No. 7, W. D., 1918.

5. A conservative policy should be adopted in making recommendations for promotion, with the good of the service, not the interests of the individual, constantly in mind.

It was impracticable, of course, for the Surgeon General's Office to approve all recommendations received.

For the troops serving in the United States, the number of appointments that could be made in each grade was limited by the consolidated Tables of Organization,[39] while for the American Expeditionary Forces grade vacancies in the Medical Corps were computed according to the percentage in each grade allowed by law.[40] For the Medical Reserve Corps, the law authorized the same percentage in each grade as had formerly been fixed for the Medical Corps of the Regular Army. The numbers in higher grades, as allowed by law, were much more liberal than those fixed by Tables of Organization. This difference should have accrued to the advantage of officers serving in France, but was not taken advantage of until after the signing of the armistice. Up to that time promotion in the Medical Corps had been more rapid in the United States than in France. This was not due to discrimination by the Surgeon General's Office against medical officers overseas. All recommendations or promotions received at the War Department approved by the commanding general in France were made without question. There were no exceptions to this rule. The Surgeon General's Office had no direct control over the promotion of medical officers serving in France or in Great Britain. The Surgeon General felt that delay in promotions in France was not a sufficient reason for withholding promotion from deserving officers serving in the home territory. Finally, upon request of the commanding general, American Expeditionary Forces,[41] it was made clear [42] that General Orders, No. 78, War Department, of August 22, 1918, (regulations governing for the duration of the war the appointment and promotion of officers of the Army), was applicable to the American Expeditionary Forces in France. The promotion of officers overseas was thus left entirely to the discretion of the commanding general, subject to approval by the War Department.[h]

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[h] A full discussion of promotions in the American Expeditionary Forces will be found in Volume II, Organization and Administration, American Expeditionary Forces.

With the signing of the armistice, appointments and promotions of all officers in the home forces were discontinued by the direction of the Secretary of War.[43] The chiefs of service could not, therefore, be given advancement commensurate with their mature years, professional qualifications, and increased responsibilities. Yet, so far as the treatment and care of battle casualties returned to the United States from overseas were concerned, the work of the Medical Department was at that time in its incipiency. In February, 1919, however, promotions for officers serving in the United States were reopened.[44] Of the first 225 recommendations submitted by the Surgeon General, all were disapproved by the War Department. After the matter had been brought to the personal attention of the Acting Secretary of War, 30 out of the 225 were finally approved. Between April 1, 1919, and August 1, 1919, the Medical Department received from local commanding officers 1,552 recommendations for promotion. Of this number 442 were selected by a board of officers in the Surgeon General's office as coming within the provisions of the restricting regulations issued by the Secretary of War. Of the 442 recommendations thus forwarded to the War Department, only 183 were approved by the Secretary of War,[45]

Considerable controversy arose in regard to the grades given temporary officers of the Medical Corps as compared with those held by officers of the Regular Army. A general idea of the situation existing at the conclusion of hostilities may be obtained from the figures given below. This computation was made on January 25, 1919, and deals only with the grade of major.

On November 11, 1918, there were 29,299 medical officers on active duty who held temporary commissions only. Of this number, 2,200, or 7.3 per cent, held at that date the grade of major. On the same date, there were in the Medical Corps of the Regular Army 920 officers, of whom 160, or 17.3 per cent, were serving in the grade of major.[46]

Leaving out of consideration all officers of less than one year's service, the proportions in each service holding the grade of major on November 11, 1918, are as follows: [46]

	Per cent.
Medical Corps, regular	19.4
Medical Corps, temporary	18.0

The following table, issued by the statistical division of the General Staff, shows that on November 11, 1918, officers of the Medical Corps had had less temporary promotion than the officers of any other branch of the Regular Army, except the Dental Corps. [47]

Increase in rank of Regular Army officers for the emergency as of November 11, 1918, by branch of service.

Branch.	Regular Army officers, Nov. 11, 1918.	Average number of steps of promotion per officer.	Percentage of officers promoted.
Coast Artillery	1,605	1.30	90
Veterinary Corps	117	1.27	92
Cavalry	1,716	1.20	86
Field Artillery	1,044	1.20	81
Judge Advocate General	33	1.12	79
Engineers	511	1.03	68
Infantry	4,041	1.00	73
General officers	51	.61	57
Medical Corps	978	.29	28
Dental Corps	227	.00	0
Miscellaneous	296	.77	36
Total	10,619	1.01	72

Under the law in force at the beginning of the war, officers appointed in the Medical Corps of the Regular Army were required to serve five years as first lieutenants before becoming eligible for promotion to the grade of captain. As the war progressed, such a limitation was recognized to be unjust. At the request of the War Department, Congress, therefore, passed a law (act approved October 6, 1917) providing that during the emergency, first lieutenants of the regular Medical Corps might be promoted to captaincies after such length of service as might be determined by the Secretary of War. At the request of the Surgeon General the Secretary of War fixed this period of service at one year.[48] After the armistice was signed it was requested that the Secretary of War rescind the new regulations and return to the provisions of the law requiring five years' service in the grade of first lieutenant.[49] This resulted in a great many resignations.

Provisions were made for but one general officer in the Medical Department of the Regular Army in the national defense act of June 23, 1916.[50] Coincident with the temporary increase of the land forces, made possible by this act, four officers of the Medical Corps were commissioned brigadier generals, National Army, August 7, 1917.[51] One of these was chief surgeon, American Expeditionary Forces. By July 1, 1918, the number of brigadier generals had been increased to seven.[52]

In the act of Congress making appropriations for the support of the Army for the fiscal year ending June 30, 1919, promulgated July 22, 1918, the Medical Department was increased by an Assistant Surgeon General, a major general, for service abroad, and two Assistant Surgeon Generals, with the rank of brigadier general, all to be appointed from the Medical Corps of the Regular Army. In addition to these, the President was empowered to appoint in the Medical Department of the National Army, and by and with the advice and consent of the Senate, from the Medical Reserve Corps of the Regular Army, two major generals and four brigadier generals.[53]

The maximum number of general officers in the Medical Department was 12—2 major generals and 10 brigadier generals—on October 15, 1918.[52]

ASSIGNMENTS.

With 30,000 officers of the Medical Corps and approximately 10,000 belonging to other branches of the Medical Department on active duty, the proper distribution of the officers and their assignment to the work they were best qualified to perform was a problem of great magnitude.

Two means were employed for selecting medical officers for assignment, viz, one by a division of the Surgeon General's Office desiring officers of special qualification; the other, a more or less routine selection by the Personnel Division for the other divisions of the Surgeon General's Office. The first method was employed more extensively during the earlier months of the war, or the formative period, when it was essential to fill many new important positions. Thus the Division of Sanitation, on its own initiative, selected officers for duty as division surgeons, sanitary inspectors, etc.; the Division of Internal Medicine chose, from among the most prominent clinicians of the country, medical officers to act as chiefs of medical service in the hospitals; likewise the Division of Surgery selected officers of reputation as chiefs of surgical service. As a general rule, however, when an officer first entered the service, the only information as to his qualifications at the disposal of the Medical Department was the statements made by the officer himself in the personal history which accompanied his application for commission. The officer in the Personnel Division who reviewed the application papers and assigned grades to original applicants noted the special qualifications claimed by each candidate, his hospital appointments, if any, his post graduate courses and medical school affiliations. With the information thus obtained as a basis for his action, he then decided to what general duty the officer should be assigned and, with a red pencil, made one of the following notations on the applicant's papers: "General surgery," "internal medicine," "head surgery," "psychiatry," "roentgenology," "sanitation," "general service." Officers whose papers were marked "general service" were then ordered to one of the medical officers' training camps or to immediate duty with troops, as the exigencies of the service required, while the papers of the specialists were sent to the heads of the respective professional divisions, who thereupon became responsible for the training and assignment to duty of the officers thus placed at their disposal. It was frequently demonstrated through the courses at the training camps, or actual duty in the hospitals, that the claims made by an officer in his personal history could not be substantiated by him and he had to be reclassified and reassigned.

All requests for orders from the professional divisions for the assignment of their officers were made to the Personnel Division, and the Personnel Division made the formal request for the order to The Adjutant General of the Army. This centralized control was found to be absolutely necessary to avoid confusion and duplication of orders. On the whole, the plan worked well.

Assignment having been made to specific divisions, officers concerned were not subject to reassignment to duty with another division until after they had been released from divisions to which assigned.

DISCHARGES.

With the signing of the armistice, machinery was immediately put in operation for the demobilization of the Army. By War Department orders demobilization, as far as possible, was decentralized.[54] Department and camp commanders and the chiefs of staff corps were given authority to discharge all officers under their respective jurisdictions as far as their services could be dispensed with.[54] These orders were immediately modified for the Medical Department in order that it might retain the necessary personnel to provide for the 120,000 battle casualties still to be returned to the United States from overseas.[55]

Immediately after the War Department issued its general instructions for demobilization, the Surgeon General sent a circular telegram to all general hospitals and to all camp surgeons and department surgeons directing the discharge of all officers of the Medical Department over 50 years of age and all below that age whose services were not essential.

At this time the question of reestablishing the Medical Section of the Officers' Reserve Corps and retaining on an inactive status the 30,000 medical officers then in the Army, presented itself for solution. As the War Department on August 7, 1918, had transferred all officers of the Medical Section, Officers'

Reserve Corps on active duty, into the United States Army,[56] the Surgeon General's Office was of the opinion that a similar order might be issued restoring former officers of the Reserve Corps to their original status; accordingly, it was requested that this be done. To this communication the following reply was received from the General Staff: [57]

> With reference to the possibility of an Executive order automatically returning to the Medical Reserve Corps upon discharge every officer of the Medical Corps now on active duty who is entitled to an honorable discharge, such action does not seem advisable. The opinion of the Judge Advocate, which has been approved by the Secretary of War, indicates that all officers serving as a part of the Army have lost their Reserve Corps identity, and that General Orders, No. 73, automatically discharged all Reserve Corps officers from their reserve obligations. The action of returning or placing in the Reserve Corps automatically upon their discharge all officers entitled to an honorable discharge does not seem expedient. The opportunity exists at this time to build up an excellent Reserve Corps from among honorably discharged officers who desire to serve in the same. To automatically place all officers in the Reserve Corps will place therein many undesirables, and would also place therein many who do not desire to serve in the Reserve Corps. The object desired may be accomplished by the discharge of all officers and the prompt replacement in the Reserve Corps of those who desire such reappointment and are recommended therefor. There appears to be no reason why the process of such reappointment should be long and cumbersome.
>
> A further objection to an order automatically placing officers in the Reserve Corps is the necessity of complying with the law as to grades which Reserve Corps officers may hold, age limitations, and limitation as to proportion of officers in any section of the Reserve Corps, all of which are set forth in section 37, act of June 3, 1916.

Upon receipt of this communication the Surgeon General immediately appointed a board of high-ranking officers, all but one of whom belonged to the temporary forces, to draw up regulations for the appointment of discharged officers to the Medical Reserve Corps. The regulations formulated by this board provided for the elimination of those whose service had been unsatisfactory, and for the grades to be given those appointed, based on length of service and the grade held at time of discharge. These regulations were approved by the Surgeon General and put into effect in the form in which they came from the board without modification of any kind.

Many officers who, at the time of discharge, refused to apply for appointment in the Reserve later changed their minds and asked for commissions.

SECTION OF MEDICAL EDUCATION.

(Medical Enlisted Reserve Corps.)

The Section on Medical Education in the Personnel Division of the Surgeon General's Office owed its origin to the Selective-Service Regulations prescribed for the administration of the draft law. Under these regulations, as originally written, medical students might be drafted into the Army as soldiers. In the spring of 1917 the authorities of medical schools sought to have them exempted on the grounds that if their medical education was continued until they graduated their value to the Army would be greater, whereas, if this plan was not adopted, ultimately, in the event of the prolongation of the war, there would be a shortage in medical officers. The desirability of some such provision was recognized by the War Department; but the exemption from the action of the draft law by any class of registrants, no matter how urgent the need, would have resulted in the creation of a favored class of men, not designated for exemption by the law. Any such action, too, if generally adopted, would have endangered the plan of raising a sufficiently large Army by draft. The proposition to exempt medical students therefore was not approved.[58]

By the end of August, 1917, a plan had been worked out which did not exempt medical students from the action of the draft law, yet made it possible for them to continue their studies. Under this plan they entered the military service of the country, as required by the draft law, but by voluntary enlistment instead of by draft. They were given the privilege of enlisting in the Medical Enlisted Reserve Corps.[59] In this corps they were subject to call to active duty in the Army at any time their services were required, and yet it was possible to leave them on an inactive status until their services were needed. The administration of the regulations on the subject was placed in the hands of the Surgeon General; and orders were issued from the Surgeon General's Office, under authority from the War Department, to make the plan effective.[60]

Since the object of the plan was primarily to provide competent medical officers for the Army, its operation was limited to students and graduates of medical schools recognized by the Surgeon General. It was further limited to students of the fourth, third, and second year classes in these schools, and to hospital internes who were graduates of these schools and who had had less than one year of interne service. Those who had had a year of interne service were regarded as eligible for commissions and were not concerned with entering the military service as enlisted men in the Medical Enlisted Reserve Corps. It was the intention of the Surgeon General, however, provided the exigencies of the war permitted, to allow this amount of postgraduate training for doctors, i. e., one year's interneship, before recommending that they be called to active duty.

In justice to men drafted into the Army, generally, the principle was also established in the regulations in question that a medical student, to continue to enjoy the privilege of pursuing his medical education, must keep up with the normal progress of the men in his class. It was provided, therefore, that a student, upon failure to pass from one class to another, or upon failure to graduate, should be called to active duty under his enlistment. Students and internes were required to make a report to the Surgeon General at the end of each semester, showing their status, and such reports required the verification by the school authorities concerned.[60]

On October 6, 1917, Congress enacted a measure which provided that all regulations concerning the enlistment of medical students in the Enlisted Reserve Corps should apply similarly to dental students.[61] Thereafter, the students of the fourth, third, and second years in dental schools were allowed to enlist in the Medical Enlisted Reserve Corps on the same status as medical students.

New Selective-Service Regulations became effective on November 8, 1917.[62] Section 151, paragraph (*b*), extended the same privileges, under regulations prescribed by the Surgeon General, to medical students, hospital internes, dentists, dental students, veterinarians, and veterinary students, if of draft age. The new regulations permitted the extension of the privilege of voluntary enlistment to students of the first-year class. A ruling of the Surgeon General, however, excluded premedical students from this privilege.[63]

These new regulations continued in force for the administration of the Medical Enlisted Reserve Corps until shortly after the armistice was declared.

WELL-RECOGNIZED SCHOOLS.

Since the object which justified the Surgeon General in leaving students on inactive status in the Medical Enlisted Reserve Corps was to furnish a professional training that would prepare them to become efficient officers in the Medical Department, it was necessary to limit the application of this privilege to schools which offered a professional training satisfactory for this purpose. Such schools were designated "well recognized" schools, and permission granted by the Surgeon General to enlist in the Medical Enlisted Reserve Corps was restricted to students and graduates of these schools.

It thus became necessary for the Surgeon General to adopt standards for the approval of medical, dental, and veterinary schools. In deciding this question the Surgeon General was guided by the opinions of recognized authorities on educational matters, outside of the Army, where such recognized authorities could be found. In a few instances a special investigation was made by the Medical Department, but this was exceptional and was undertaken only where it was believed that a change in classification might be warranted by recent changes at the institution.

Medical schools.—The standard adopted of a "well-recognized" medical school was the recognition of its graduates as being eligible for examination for license to practice medicine by the State boards of medical examiners in 50 per cent of the States. Inspections of medical schools had been made in recent years by the Carnegie Foundation, the Council on Medical Education of the American Medical Association, and the Association of American Medical Colleges. The attitude of the State boards was to a large extent based upon the results of these inspections, and it was felt that their verdict represented fairly the general consensus of opinion as to the standing of medical schools.

The most definite classification of medical schools was that of the American Medical Association, which divided the schools into three classes, A, B, and C. This classification, however, was never adopted by the Surgeon General as such, although its worth was fully recognized. The adoption of a standard based on the action of the legally constituted authorities of the several States had obvious advantages. The fact that the standard adopted by the Surgeon General on this basis practically included Classes A and B of the American Medical Association and excluded Class C indicates both the fairness and the liberality of the standard.

In all cases where new inspections were made by the American Medical Association the details of the results of these inspections were made available for consideration by the Medical Department. The report itself, however, and not the decision of the Council on Medical Education, was taken as a basis for a decision as to whether a school should be classed as "well-recognized." All doubtful cases were referred to the Surgeon General himself, and a decision was reached after consultation with officers in the department, among whom were some of the leading medical educators of the country. By this plan the Medical Department made use of the very valuable assistance of the American Medical

Association, and yet preserved its own independence of judgment and action. In a few instances, where it seemed desirable, the Medical Department had inspections made under its own direction.

A change was made in the classification of a school, when the new facts, brought out by any of these inspections, indicated that existing conditions warranted such change. If a school was advanced to recognition as a "well-recognized" school, the benefits of the decision were made available at once for its students. If, however, the approval of a school was withdrawn, when it had previously been recognized, the students in the Medical Enlisted Reserve Corps were allowed to remain on inactive status until the following fall. This enabled them to complete the school year in the same institution, and gave them a chance to enter some "well-recognized" school in the fall, if found qualified.

Dental schools.—The problem of establishing a satisfactory standard of classification of dental schools was not so easily solved. The inspection and classification of dental schools had not been carried out with the same thoroughness as in the case of medical schools. The State boards of registration in dentistry, therefore, had less reliable data on which to base their judgment, and it was not felt that a decision based upon their rulings would offer as satisfactory a standard as in the case of medical schools. Under these circumstances, and because some standard must be adopted quickly to meet the requirements of the Selective-Service Regulations, the list of "well-recognized" dental schools was first based on the action of the National Association of Dental Faculties.

The American Institute of Dental Teachers, which met in Pittsburgh January 29–31, 1918, was requested to indicate to the Surgeon General the most authoritative body to consult on questions of standards in dental education,[64] The Dental Educational Council of America was recommended, and its forthcoming report on the classification of dental schools was recommended for acceptance. Since the Dental Educational Council of America was composed of 15 members, five each from the Association of State Boards in Dentistry, the National Dental Association, and the National Association of Dental Faculties, it appeared to be the most broadly representative and the most authoritative body from which to seek advice in these matters. It was accepted by the Surgeon General as an advisory committee on matters of dental education, but the right of independent decision was reserved for the Surgeon General's Office.[65]

Following a request from the Surgeon General's Office for information about the forthcoming classification of dental schools, the secretary of the Dental Educational Council stated that additional data were being collected, through a questionnaire, about the four-year curriculum which had been adopted by most schools within a year; and that the classification of dental schools would be taken up as soon as this information was secured. A meeting of the council was held March 26–28, 1918, at New York City. A provisional classification of dental schools was made by the council, the schools being divided into classes A, B, and C. It was voted that a final classification would be adopted at the annual meeting in August, and that dental schools that were dissatisfied with their position in the provisional classification would be inspected again before the annual meeting.

The Surgeon General decided that dental schools which remained in class C after the final classification in August would be removed from the list of "well-recognized" schools.[66] A notice to this effect was sent individually to those dental schools, previously "well-recognized," which were placed provisionally in class C at the council meeting in New York. They were notified that recognition by the Surgeon General would be withdrawn on September 1, 1918, if the school remained in class C; that their students, who were members of the Medical Enlisted Reserve Corps, would be allowed an opportunity, until October 15, 1918, to enroll in some well-recognized dental school; and that students not so enrolled on that date would be called to active duty. At the annual meeting of the Dental Educational Council, the schools definitely placed in class C were removed from the list of well-recognized schools.

Veterinary schools.—The status of veterinary education had been such that little accurate information upon the facilities and efficiency of those schools was available. There was not in veterinary education any body comparable to the Federation of State Medical Boards or to the Dental Educational Council. The only general agency that had passed upon veterinary schools was the Department of Agriculture, which had made certain regulations as to schools whose graduates should be eligible to enter the examinations for appointment as inspectors under the Bureau of Animal Industry.[67]

The Surgeon General's list of well-recognized veterinary schools was made after consulting officers of the Veterinary Corps, and included 21 institutions.[68] In March, 1919, one school (North Dakota), giving only two years of the four-year course, was added to this list.[68]

It became evident that some better standardization was necessary, and in April, 1918, after conference with veterinary educators and with representatives of the Department of Agriculture, the Surgeon General's Office announced that after June 30, 1918, no veterinary school would be considered well-recognized unless it required for entrance successful completion of at least two years of high-school work.[69]

STUDENTS.

It was necessary, while adopting these measures for the purpose of insuring a supply of officers for the Medical Department, to prevent registrants from using these provisions as a means of practically evading the draft. The regulations, therefore, clearly defined the words "student" and "bona fide student."[63]

The necessity of keeping up normal progress in this training has been referred to. In any individual school this was well handled by the school authorities; but it became necessary to regulate the transfer to students from one school to another. This concerned especially the "failed" or "conditioned" students, and those who feared they would fall into these groups. A student was required to maintain his proficiency in the institution he was in, as an evidence of possessing the proper qualifications for an officer.

Notwithstanding the desirability of holding premedical students, in order to assure an adequate supply of medical students for future needs, the Surgeon General ruled that they could not be included under the head of "medical students," although the educational requirements were such as clearly to indicate their intention to study medicine.[63] With the new registrations for the draft and the lowering of the draft age, this problem became acute. On May 20, 1918, a circular letter was issued to the deans of well-recognized medical schools stating that the Surgeon General would recognize matriculation of students for the entering class of 1918–19 from that date, and that permits for enlistment would be issued after June 1 for students so matriculatd.[70] In spite of this precaution a considerable number of prospective medical students were lost through the action of the draft law, and the entering classes of medical schools were seriously reduced.

CERTIFICATION OF APPLICANTS FOR THE MEDICAL ENLISTED RESERVE CORPS.

All applicants for voluntary enlistment under section 151 (*b*), Selective-Service Regulations, were required to furnish affidavits from the authorities of their schools establishing their status as students or graduates of the school in question.[60]

AUTHORITY FOR VOLUNTARY ENLISTMENTS.

The Selective-Service Regulations required registrants who applied for voluntary enlistment in the Medical Enlisted Reserve Corps to obtain the authority of the Surgeon General to so enlist.

By the end of November, 1917, the Surgeon General's Office was overwhelmed by the number of applications for permission to enlist. It was manifestly impossible to handle these individual cases in season to permit enlistment before these registrants would be compelled to fill out their questionnaires for the draft boards shortly after December 15. Consequently these applications were returned to the deans of the schools with a letter of instructions; and on December 7, authority was sent to all recruiting officers to accept and enlist in the Medical Enlisted Reserve Corps the students mentioned in section 151 (*b*), with the provision that the dean of the school, or his authorized agent, furnish an affidavit to the effect that the applicant was a bona fide student in the regular course in the school, and the class in the school, of which the applicant was a member.[71]

This blanket permission to recruiting officers was the only practicable way of meeting the emergency at that time. The method was found to have certain objections, however, and was no longer necessary after the emergency had passed. On May 4, 1918, this blanket permission was revoked, and authority for voluntary enlistment was granted thereafter only on permission from the Surgeon General's Office in individual cases.[72] This method was continued until August 9, 1918, when all further enlistments in the Medical Enlisted Reserve Corps were stopped by general orders of the War Department.[73]

This discontinuance of enlistments for the Medical Enlisted Reserve Corps was based upon the abandonment by the General Staff of the policy of building up a reserve corps during the time of actual hostilities. It was felt that the professional training of medical and other students was provided for by the inauguration of the Students' Army Training Corps, the details of which are given more fully on pages 169 and 269.

A certain number of soldiers who had been medical students but were then in active service were discharged so that they could enlist in the Medical Enlisted Reserve Corps and resume the medical course, or they were transferred to the Medical Enlisted Reserve Corps. The needs of the organization of which such a soldier was a member, however, frequently made it impracticable to grant the request for return to study medicine.

HOSPITAL INTERNES.

The plan of allowing graduates of well-recognized medical schools to serve as internes in hospitals for one year had a double object. It aimed to enhance their practical training and to preserve the efficiency of the hospitals of the country for the protection of the civilian communities.

This privilege was qualified by requiring the fact of graduation from a well-recognized medical school to be attested by the proper authorities of the medical school, and the fact of interneship to be attested by the superintendent of the hospital concerned. The dates of graduation from the medical school and of the beginning of the interneship were also established by affidavits. On the receipt of satisfactory data, accompanied by an application from the interne to enlist in the Medical Enlisted Reserve Corps, the Surgeon General's Office authorized such enlistment. When the enlistment had been effected, a permit was sent to the interne, authorizing him to remain on inactive status until a specified date—usually one year after his interneship began—unless the exigencies of the war made it necessary to call him for active duty at an earlier date. A copy of this permit was sent to the superintendent of the hospital.

The continuance of internes on inactive status was contingent upon the performance of his duties in the hospital in a manner satisfactory both to the Surgeon General and to the authorities of the hospital. This satisfactory performance of duties was established by reports from the hospital authorities. Thus the hospital was protected not only as to the length of service of the interne, but as to the character of his work. The Army was protected by the assurance that the interne was getting a satisfactory experience and by an agreement of the superintendent of the hospital to notify the Surgeon General at once if for any reason the interneship was terminated.

The medical Department could train a large number of these graduates satisfactorily in Army hospitals, and in allowing them to remain in civilian hospitals it was desirable to be assured that they would get at least an equally good professional training. There was a shortage of internes because so many graduates, eager to serve their country, had applied for commissions without waiting for a hospital training.

It was necessary for the good of the community to provide first for the public hospitals. Therefore, the following regulation was enforced: [63]

> The department will not recognize interneships in hospitals, sanitariums, or other institutions conducted for profit; or in small private hospitals (50 beds or less); or new interneships at any hospital, if established or added since May 18, 1917, to those previously existing, unless such new interneships are necessitated by and are proportioned to an increase in the bed capacity of said hospital.

The enforcement of this regulation necessitated the classification of the hospitals of the country. There was no existing classification of hospitals that was satisfactory for the purposes of the Medical Department. Valuable information was collected from the reports of the American Hospital Association, the Council on Medical Education, and the American College of Surgeons. In addition, a questionnaire was sent out from the Surgeon General's Office to those hospitals which, on information available from these sources, appeared to be eligible for approval as places in which to train internes for Army purposes.

On the basis of these returns the hospitals were classified into acceptable, doubtful, and not acceptable groups.

It was the policy of the Surgeon General not to interfere with arrangements for internes already made except where it was clear that the interne could not get an adequate training. Owing to the scarcity of internes, this matter largely handled itself, for the graduate, aided by advice from the medical school, could generally find a satisfactory interneship.

NUMBER AND PROPORTION OF MEDICAL STUDENTS ENLISTED.

Deans of medical schools were asked to report the number of students in the schools on March 1, 1918, and to indicate those who had been enlisted in the Medical Enlisted Reserve Corps.[74] This report showed there were on March 1, 1918, in the 82 well-recognized medical schools in the United States, 12,354 students, of whom 7,366 were enlisted (59.62 per cent). The number and percentage of enlisted men at that date in the several classes were as follows:

First year, 1,583 (40.03 per cent).
Second year, 2,162 (67.41 per cent).
Third year, 1,989 (74.57 per cent).
Fourth year, 1,632 (64.60 per cent).

The 40.03 per cent who were not enlisted included several groups; e. g., aliens, physically unfit, deferred classification on account of dependents, over age, under age.

CALL TO ACTIVE DUTY OF FAILED STUDENTS.

Since the purpose and justification of membership of students in the Medical Enlisted Reserve Corps on inactive status was solely to prepare them professionally to become medical officers, it was the policy of the Surgeon General's Office to terminate the inactive status of any student member of the corps who failed to progress in his professional preparation at the normal rate. This was accomplished as promptly as practicable.

It was held that if a student, by his records, showed he was unable to progress with his class, whether from lack of capacity or from lack of application to his work, the likelihood of his having the aptitude and ability to make a successful medical officer was too small to warrant his being left inactive after these facts were demonstrated. Two classes of exceptions to this policy were made: (*a*) Those whose deficiency in school work was clearly due to prolonged personal illness; (*b*) those who had volunteered or been drafted before the inactive status in the Medical Enlisted Reserve Corps was available, and who were transferred to the Medical Enlisted Reserve Corps and returned to school so long after the opening of the school year that it was impossible for them to make up all the lost work.

Under this policy there were called to active duty between April 10 and November 10, 533 medical students reported by their deans as unable to progress with their class or to have left school. This was 5.96 per cent of the total (8,937) of medical students enlisted in the Medical Enlisted Reserve Corps.[74]

DENTISTS AND VETERINARIANS.

Registrants who were graduates of well-recognized schools in dentistry and veterinary medicine were eligible for voluntary enlistment in the Medical Enlisted Reserve Corps by the Selective-Service Regulations. The object of this provision was to enable the military authorities to place these men in the military service where their experience and training could best be utilized. Since, however, these graduates had already obtained the amount of professional training needed for Army purposes, there was no sufficient military justification for leaving them on inactive status, as in the case of the undergraduates in the same schools. Consequently they were called to active duty as soon as their services could be utilized in the Army.

This position was made plain in the early circulars sent out from the Surgeon General's Office. Nevertheless a considerable number of such graduates expected to be left on inactive status to continue their professional work in civil life until assured of an opportunity to serve in the Army under commissions. Some of these remonstrated, when called to duties as privates, in accordance with the terms of their enlistment. No injustice was done to these men, however, because they were physically fit for military service, were of draft age, and would have been drafted to serve as privates in the line. The voluntary enlistment in the Medical Enlisted Reserve Corps did not change this result, but assured them an assignment to work which would make use of their professional training.

A question arose as to the treatment of senior students of the year 1917–18, when they became graduates at the end of the school year. By that time special schools in dentistry and veterinary medicine had been organized at the Medical Officers' Training Camp, Fort Oglethorpe, Ga. Those of the upper half of the graduating classes were divided into groups to be sent to these schools for further training at specified dates, and those of the lower half were called to active duty as privates.

The situation in regard to dentistry was peculiar, in that so many men had been commissioned in the Dental Reserve Corps that new commissions were not granted for a number of months, and a capable student could not expect a commission after graduation as would ordinarily be the case.

In the beginning the administration of the requirements connected with enlistments in the Medical Enlisted Reserve Corps formed part of the work of the Enlisted Section, Personnel Division, of the Surgeon General's Office. As these duties increased, however, the chairman of the Council of Medical Education of the American Medical Association and director of the Graduate School of Harvard University was ordered to the Surgeon General's Office, toward the end of November, 1917, to direct the work.[75] The administrative details, in connection with the carrying out of these regulations, continued to increase, and a Section on Medical Education was organized in the Personnel Division of the Surgeon General's Office. At the height of this work there were employed in this section six commissioned officers, one sergeant, first class, and a clerical force of 15.

On February 10, 1918, a Committee on Education and Special Training of the Training and Instruction Branch, War Plans Division, General Staff, was created.[67] This committee was authorized to represent the War Department in its relations with the various educational institutions of the country and was given broad administrative powers in this direction. As its work developed it became clear that its duties should properly include the educational supervision of medical schools, which, as has been explained, had been exercised up to this time by the Surgeon General through the Section on Medical Education in his office. Possible friction or duplication of effort was avoided through the appointment on May 23, 1918, of a liaison officer to function between the Surgeon General's Office and the Committee on Education and Special Training; and also the acceptance on the part of the committee of the plans and regulations affecting the subject which had been inaugurated by the Surgeon General.

THE STUDENTS' ARMY TRAINING CORPS.

Upon the discontinuance of enlistments in the Medical Enlisted Reserve Corps in August, 1918,[73] and the establishment of the Students' Army Training Corps,[77] which was intended to provide for the education of all students, including medical, dental, and veterinary, it was clear that the administration of the regulations governing the education of these students would ultimately pass entirely out of the hands of the Surgeon General to the Committee on Education and Special Training. The armistice was declared, however, before the change in jurisdiction had been completed.

It was desirable from a military standpoint and fair to the students that members of the Medical Enlisted Reserve Corps who were still in the schools should enter the Students' Army Training Corps. Early in October, 1918, soon after the Students' Army Training Corps was in actual operation, steps were taken to bring this change about.[78] The procedure was for the commanding general of the department concerned to call the member of the Medical Enlisted Reserve Corps to active duty in the Medical Department and immediately transfer him to the Students' Army Training Corps, assigning him to that unit of the corps located at his school. This did not apply to all members of the Medical Enlisted Reserve Corps, and The Adjutant General issued orders to the commanding generals of departments to make this change for such men as were recommended by the commanding officer of a Students' Army Training Corps unit. This latter officer, in turn, obtained his list from the dean of the school.

The process described required some time to complete. Delay was caused partly by misunderstanding, partly by shortage of clerical help everywhere because of the epidemic of influenza at that time, and in many cases also because the service records—essential for effecting the transfer of the men—were not at department headquarters. In many instances this lack of service records at department headquarters was due to the fact that students had enlisted in one territorial department and then gone into another to attend school without notifying department commanders that residences had been changed.[74]

Just before the armistice was declared there was a large number of transfers which had not been effected, and their discontinuance was ordered to prevent a technical increase in the active Army.[79]

DEMOBILIZATION OF THE MEDICAL ENLISTED RESERVE CORPS.

When the transfer of members of the Enlisted Reserve Corps to the Student's Army Training Corps was stopped because of the armistice there were then left on inactive status in the Medical Enlisted Reserve Corps 6,684 men, of whom 4,218 were medical students.[74] The Surgeon General's Office relinquished all educational control over schools and students shortly after the signing of the armistice, but this did not relieve the members of the corps from their liability for military duty.[80] On December 11, 1918, The Adjutant General authorized commanders of territorial departments of the Army to discharge all members of the Enlisted Reserve Corps who had not been called to active service whose service records were on file at headquarters of the given department by reason of their services being no longer required.[81]

Enlistments, discharges, and transfers in Medical Enlisted Reserve Corps,[74] under section 151 (b), beginning September 4, 1917.

Status at time of enlistment.	Number enlisted.	Discharges.			Called to active duty as privates.	Transferred to Students' Army Training Corps.	Remaining inactive as of Dec. 10, 1918.
		To accept commissions.		All other causes.			
		In Army.	In Navy.				
Medical students	8,757	31	252	40	533	3,863	4,038
Internes	382	241	31	18	37		55
Dental students	5,827		4	38	1,789	2,247	1,749
Dentists	1,079	3	6	19	891		160
Veterinary students	1,064			6	424	181	453
Veterinarians	332			15	265		52
Total	17,441	275	293	136	3,939	6,291	6,507

The administrative control of the Medical Department activities, other than those essentially educational, at the various colleges which had units of the Students' Army Training Corps, including units of medical, dental, and veterinary students, by the Students' Army Training Corps Section, Division of Sanitation, Surgeon General's Office, is described in the administrative history of the Division of Sanitation, this volume (q. v.).

SECTION OF ENLISTED PERSONNEL.

PROCUREMENT.

On April 6, 1917, there were 6,619 enlisted men, Medical Department.[82] The national defense act of June 3, 1916, provided that the total number of enlisted men in the Medical Department should not exceed the equivalent of 5 per cent of the total enlisted strength of the Army, exclusive of the enlisted force of the Medical Department, except that in the time of actual or threatened hostilities the Secretary of War was authorized to enlist or cause to be enlisted in the Medical Department such additional number of men as the service required.[83]

On May 21, 1917, the Surgeon General recommended that the Secretary of War increase the authorized allotment of enlisted men to 10 per cent of the total enlisted strength of the Army for the emergency. This recommendation was approved by The Adjutant General of the Army in his first indorsement, June 15, 1917, as follows:[84]

> To the Surgeon General, with the information that the Secretary of War directs that, until further orders, the enlisted strength of the Medical Department of the Regular Army be maintained at such strength as will, when added to the enlisted strength of the medical units of the National Guard in the service of the United States, and of all such other Federal forces as may be hereafter raised equal, as near as may be, 10 per cent of the aggregate enlisted strength of the said forces. The increase herein authorized to be effected pari passu with the increase of the enlisted personnel of the forces it is to serve.

On June 30, 1917, there were 16,773 enlisted men,[85] Medical Department, the surplus over the number representing gains by enlistment, reenlistment on April 6, by transfer from the line.

There were drafted into the Federal service, for duty with the several National Guard divisions, 59 field hospitals and 47 ambulance companies, the total enlisted personnel for which was 10,506.[86] The total strength of the personnel for the various sanitary detachments assigned to line organizations numbered 6,119 enlisted men,[86] making an increment to the Medical Department totaling 16,625 on August 5, 1917.

The acquisition of additional enlisted personnel for the Medical Department was effected by means of voluntary enlistment, transfer, recalling Regular Army reservists to active service, and by the selective draft.[87]

Prior to June 23, 1917, there was no distinction made between enlisted men assigned to duty with units or detachments for the performance of essential Medical Department functions and those assigned to dental or veterinary work.[87] On June 23, 1917, however, the first subdivision of the enlisted force of the Medical Deparment was made in the provision of the United States Amy Ambulance Service,[88] the enlisted strength of which was raised and maintained by voluntary enlistment and the draft, subsequently limited to 7,605 men.[89] On June 30, 1917, in the organization of the Sanitary Corps, provision was made for an enlisted force in addition to an officer personnel,[90] referred to above. The enlisted force of this corps was subsequently limited to 3,945 men.[91] An enlisted personnel was provided specifically for the Veterinary Corps on October 4, 1917,[92] to number 16 for each 400 animals in the service. These special types of enlisted personnel of the Medical Department were authorized only for the period of the emergency.

The Medical Department obtained men from the draft in two ways, indirectly and directly.

When mobilization of the National Army divisions began inducted men were sent to mobilization camps by the War Department, and assigned to organizations at the camps by local commanders. The type of enlisted men thus obtained for the Medical Department depended largely upon the attitude assumed by divisional commanders; but, generally, under the supervision of division surgeons, highly desirable men possessing qualifications best suited to the needs of the Medical Department were obtained by this indirect method.

In December, 1917, the War Department authorized the voluntary induction of draft registrants directly into the Medical Department.[93] This permitted the selection of men of special qualifications who desired to be inducted into the Medical Department. The actual induction was effected by furnishing the registrants with requests, authorized by the Surgeon General, to be presented to local boards concerned. This authority to deal directly with local draft boards was rescinded in June, 1918,[94] following which time requisitions had to be made on the Provost Marshal General for the voluntary induction of registrants, and the Provost Marshal General forwarded the requisitions to local boards concerned, later notifying the Surgeon General whether the registrants accepted or declined service in the Medical Department.

As soon as the Medical Department training camps could be utilized as mobilization camps for enlisted men of the Medical Department, inducted men, procured on requisition by the Surgeon General to the Provost Marshal General, were sent thereto, from time to time, in such numbers as were authorized by the Secretary of War.

The maxmum number of enlisted men, Medical Department, was reached at about the time of the armistice, when there were 281,341 in active service. This number included 17,160 enlisted, Veterinary Corps, and those in the Sanitary Corps and Army Ambulance Service.[82]

CLASSIFICATION.

The following table represents the occupational needs of the Medical Department for enlisted men in time of war as nearly as can be calculated from the experience of the department in the recent war.[95]

	Per cent.
Accountants	0.5
Auto and gas engine men [1]	.5
Auto drivers and truck drivers [1]	2.0
Bakers	.5
Barbers	.2
Blacksmiths	.5
Blacksmiths' helpers	.5
Bookkeepers	5
Butchers	.2
Canvas workers	.1
Carpenters, house	1.0
Carpenters, cabinet-makers	.1
Clerical workers	1.0
Contractors	1
Cooks	2.0
Draftsmen, architectural	.1
Draftsmen, mechanical	.1
Draftsmen, topographical	.1
Druggists	1.0
Electricians, instrument repair	.3
Electricians, motor and dynamo	.5
Electricians, outside work	.1
Electricians, wiring	.1
Telephone operators	.3
Telephone-repair men	.1
File men	.4
Typists	1.0
Stenographers and typists	1.0
Plumbers	.1
Without special qualifications but able to read and write the English language	85.1
	100.0

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[1] Contingent upon the control and operation of motor vehicles by the Medical Department.

TRAINING.

With the concentration of troops in divisions, each division, so far as the Medical Department was concerned, constituted a training unit for its sanitary personnel. This training consisted of two parts, one in which the medical personnel were trained in their military duties and military environment, the other in which the personnel was trained in such professional matters as were created or affected by such military environment. The first few weeks following mobilization were devoted to organization, equipment, and supply, which in themselves were considered valuable as education. On November 1, 1917, an intensive course of training was instituted, which continued so long as the divisional troops were in the United States.[96] Early in the war period it was provided that such lectures, classes, and study found to be necessary for the training of the enlisted personnel be instituted at all hospitals.[97]

A large number of schools for the training of enlisted men in special work was early developed at the Medical Department training camps.[98] These enlisted men's schools included those for the making of noncommissioned officers, nurses and ward men, dispensary assistants, clerks, chauffeurs, and gas-engine mechanics. The medical training camps were also required to organize, maintain, and supply a large number of practically every formation which the Medical Department provided. Some of these were permanently attached to the camps as training units; others were provisional organizations without official status as such but used for training purposes until needed for conversion into new and official organizations. Still others were organized solely for the purpose of being sent elsewhere as needed.

The allowance of personnel for the Medical Department which was sent to camps for training was never sufficient, as was demonstrated by the fact that the services of the great majority thus sent to camps were so imperatively demanded outside as to cause their being ordered away before completion of their training course. There were instances in which enlisted men were sent away after arrival as soon as they could be equipped.[99]

ASSIGNMENTS AND REASSIGNMENTS.

The peace-time system of managing the assignment and reassignment of the enlisted personnel of the Medical Department in the Office of the Surgeon General required no radical change during the war period. It was based, in the main, on the available number of the personnel, their qualifications, and geographical location. Personnel files contained information about each enlisted man, which, for purposes now being considered, included his name, grade, and special qualifications. This information was obtained from the medical officer first receiving men enlisted for, reenlisted in, or transferred to the Medical Department, and from the periodic returns made for each Medical Department organization by its commanding officer.[100] It permitted an assignment of individual or groups of enlisted men for a specifically needed duty. Usually assignments of enlisted personnel, when initiated by the Surgeon General's Office, referred to numerical strength, qualified by reference to qualifications, to be arranged for locally, when necessary, and when the enlisted men were already in the service.

The first demand for Medical Department enlisted personnel, having to do with relatively great numbers, occurred when the National Army divisions were mobilized in the early fall of 1917. In addition to the personnel required for the divisional Medical Department units base hospitals serving the divisions had to be instituted. These activities demanded more Medical Department personnel than could be furnished from the small reserve built up by voluntary enlistments immediately prior to the mobilization. When mobilization of the divisions actually occurred, skeletal groups of Medical Department enlisted men were furnished by the War Department to the divisions and base hospitals serving the divisions. The completion of the units was left to local division commanders, who, under authority of Army Regulations and War Department orders, were empowered to transfer inducted men to the Medical Department.[101]

Assignments and reassignments of enlisted men by the Enlisted Section Personnel Division were made at the request of some other administrative division of the Surgeon General's Office or activity without the War Department, such as Headquarters, American Expeditionary Forces.

PROMOTION OF ENLISTED MEN TO COMMISSIONED GRADES.

Prior to the war commissions in the Medical Department were attainable only by those possessing degrees in medicine, dentistry, or veterinary surgery. In June, 1917, however, two branches of the Medical Department were established in which commissions could be made without reference to professional attainments, viz, the United States Ambulance Service [88] and the Sanitary Corps.[90]

Though the creation of the Ambulance Service was the earlier, it consisted of a definite organization with delimited functions and required a building up from its foundations. In the creation of the Sanitary Corps, however, provision was made for the commissioning of those possessing special skill in sciences allied to medicine as well as those possessing knowledge of special advantage to the Medical Department. The latter provision made it possible to commission many enlisted men of the Medical Department, especially noncommissioned officers who, by years of experience, were qualified for duty as commissioned officers of that part of the Sanitary Corps concerned with administrative details, such as adjutants, medical supply officers, and mess officers. Being available and the demand being immediate, the commissioning of a number of noncommissioned officers, Medical Department, in the Sanitary Corps was begun in July 1917, on the recommendation of the Surgeon General.[102]

In the Ambulance Service, the officer personnel comprised, at first, officers of the Regular Medical Corps and the Medical Reserve Corps. Promotion to the commissioned grades of the Ambulance Service was open to the enlisted men of that service, and as they demonstrated their ability promotions from among them were made until eventually all Medical Reserve officers were replaced by officers of the ambulance, who, entering the service as privates, were gradually advanced to the commissioned grades.

The Enlisted Reserve Corps was utilized as a means for conserving potential officers for the Medical, Dental, and Veterinary Corps while its members were being fitted by professional education to qualify for commissions in the Medical Department. Promotions to commissions therefrom differed materially from methods pursued in commissioning officers in either the Sanitary Corps or the Army Ambulance Service and were based on the same regulations which controlled the entrance into the commissioned grades of the Medical, Dental, and Veterinary Corps from civil life.

DISCHARGES.

The national defense act of May 18, 1917, provided that all enlistments, including those in the Regular Army Reserve, which were in force on the date of the approval of the act and which would otherwise have terminated during the emergency should continue in force during the emergency, unless sooner terminated by the War Department; and that all persons who enlisted subsequent to April 1, 1917, either in the Regular Army or in the National Guard, as well as all who enlisted in the National Guard between the dates of June 3, 1916, and May 18, 1917, were entitled to be discharged, on their own application, upon the termination of the emergency.[103] In addition to these general provisions for the automatic termination of service as enlisted men, the President was empowered, by the act of May 18, 1917, to provide for the discharge of any or all enlisted men whose status with respect to dependents rendered such discharge advisable at any subsequent time during the emergency.[103] All enlisted men given commissions as officers in active service were discharged as enlisted men to enable them to accept the commissions. Other forms of discharge during the emergency included those for physical disability and by reason of an approved sentence of a general court-martial.

Almost immediately after the signing of the armistice there was a concentrated effort on the part of the enlisted men serving in the Medical Department for discharge. As demobilization of the line of the Army progressed, the enlisted force of the Medical Department was reduced. The decrease, however, was not proportionate to the number being discharged from other organizations, because of the number of sick and wounded to be provided for in the hospitals of the United States.

On January 30, 1919, there were approximately 219,600 enlisted men, Medical Department, medical and dental services, and approximately 13,500 enlisted men of the Veterinary Corps in service.[82] These numbers were gradually reduced, until on June 30, 1919, there were approximately 98,400 enlisted men on medical and dental service and 1,970 enlisted men, Veterinary Corps.[82] These numbers were finally reduced by the practical elimination of the drafted men and those who enlisted after April 1, 1917, to approximately 17,600 men for medical and dental service and 990 in the Veterinary Corps.[82]

There was some dissatisfaction displayed by many of the enlisted men of the Medical Department because of their retention in service beyond the period required of enlisted men of line organizations; but, on the whole, their service was rendered cheerfully, particularly when the reason for the retention was properly explained to the enlisted personnel. A message from the Surgeon General of the Army to the enlisted men of the Medical Department, February 11, 1919, explaining the necessity for retaining them in the Army on active duty, posted at various military camps, posts, hospitals, and other stations, had, in a great measure, a quieting influence.[104]

THE ARMY NURSE CORPS SECTION.

In accordance with act of Congress, February 2, 1901,[105] which authorized the establishment of the Army Nurse Corps, its administration was conducted, as a section of the Personnel Division, by the superintendent of the corps. For a time during the war period, as shown elsewhere (see Hospital Division), the Army Nurse Corps and the Army School of Nursing functioned as part of the Hospital Division, reverting to their proper places in the Personnel Division with the reorganization of the Surgeon General's Office in November, 1918. (See Chart XXIV, p. 540.)

Upon the entry of the United States into the World War the Army Nurse Corps consisted of 233 regular nurses and 170 reserve nurses.[106] The reserve nurses had been previously assigned to active service in the Military Establishment as a result of mobilization of troops on the Mexican border. One of the first reactions to the declaration of war was that the then diminutive corps, although adequate for the nursing of the sick soldier of an Army on a peace-strength footing, must be immediately and rapidly enlarged in proportion to the great Army required to aid our Allies, whose armies were at maximum strength. That this task was accomplished is evidenced by the fact that at the time the armistice was signed the personnel of the Army Nurse Corps had increased from 403 to 21,480, including regular and reserve nurses.[107]

The expansion of the corps began very shortly after war was declared. Nurses were appointed in the regular corps as rapidly as possible, and their number was augmented by the assignment to active service of reserve nurses. Existing regulations provided that the enrolled nurses of the American Red Cross Nursing Service should constitute the reserve of the Army Nurse Corps, and in time of war or other emergency might, with their own consent, be assigned to active duty in the Military Establishment.[108] That there was a reserve force ready to respond to the call when the need arose was due to the breadth of vision and the determined effort of the great nurse leader, Miss Jane E. Delano, late director of the Red Cross Nursing Service, who died at Base Hospital No. 69, Savenay, France, April 15, 1919, while making a personal survey of the nursing situation overseas.

As the war progressed the American Red Cross Nursing Service was called upon to furnish large numbers of nurses to meet the rapidly increasing needs of the service. Throughout the entire war this organization worked in close cooperation with the Army Nurse Corps Section of the Personnel Division of the Surgeon General's Office. It was early recognized by the executives of both organizations that it would be necessary to waive certain requirements for entrance into the service for the duration of the war. The age limit (between 25 and 35 years) was modified to include applicants from 21 to 45 years. Registration, previously enforced, was waived. Nurses who were not citizens of this country but were citizens of any allied country were accepted, if otherwise eligible. As reserve nurses were assigned to active service for the period of the war emergency, nurses were appointed in the Regular Corps for the same period instead of for the three years ordinarily required. The waivers necessary to obtain the large body of nurses needed were made with great reluctance on the part of the Surgeon General and of the officials of the American Red Cross. The older requirements for appointment in the Army Nurse Corps were restored by the Surgeon General [107] immediately after the signing of the armistice, when it was no longer necessary to continue to increase the corps.

As the need for nurses became acute, both the Army Nurse Corps Section of the Surgeon General's Office and the Red Cross Nursing Service at intervals inaugurated drives to obtain the needed number. In December, 1917, a letter was sent to the superintendent of each training school for nurses in the United States requesting that the pressing need of the Medical Department of the Army for graduate nurses be put before their graduates. Publicity campaigns were effected through the press of the country. The Council of National Defense aided materially in stimulating the interest and patriotism of the nurses of the country, as well as in encouraging young women to enter schools of nursing. Graduate nurses who were not eligible for appointment in the Army Nurse Corps or for enrollment in the Red Cross Nursing Service were urged to enter civilian hospitals, thereby releasing eligible graduate nurses for service in the military establishment. The nurses responded to the call in large numbers, but supplying the daily need was a different problem. Constantly imminent was the danger that the supply of graduate nurses would be inadequate. Steps were taken, therefore, by the Red Cross Nursing Service to train nurses' aides, and courses in the first elements of nursing were established throughout the country. As the aides were not called upon until October, 1918, the groups first formed by the Red Cross offered their services elsewhere and entered upon other work. By October, 1918, it was clearly seen that the supply of graduate nurses was inadequate to meet the need, and shortly before the armistice was signed the Surgeon General requested the American Red Cross Nursing Service to enroll 1,500 nurses' aides.[109] This was done, but the signing of the armistice prevented the sending of these aides overseas.

A plan for an Army School of Nursing, with headquarters in Washington, was approved by the Secretary of War on May 25, 1918,[110] and the institution was established by the War Department in June of the same year.[j] The course as planned contemplated three years' training to be given at the various large Army hospitals in this country, with an affiliation of one year at civil hospitals in nonmilitary branches of nursing. The establishment of these training units at the different hospitals necessitated considerable rearrangement in the assignment of chief nurses, since many of these, although excellent executives, had not the necessary experience in the management of training schools.

As the mobilization of the vast Army was begun, hospitals were opened wherever troops were concentrated, and base hospitals were established at each of the camps and cantonments. These hospitals, as originally planned, were to have 1,000 beds each, with a personnel of 100 nurses, but many eventually had a far greater bed capacity, some of the larger hospitals having a personnel of several hundred nurses. Hospitals were organized also at various aviation stations, ports of embarkation and debarkation, arsenals and recruit depots, and hospital trains were put into operation, each requiring its quota of nurses. In connection with the Attending Surgeon's Office, Washington, D. C., a War Emergency Dispensary was established to look after the physical welfare of the various departments of the Government [111] and nurses with special experience in public-health work were assigned to this duty. The nurses attached to the dispensary visited the clerks in their homes when they reported sick, and made recommendation as to their disposition. Nurses were also placed in the various rest rooms of the large Government buildings, where minor ailments were treated daily.

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[j] The History of the Army School of Nursing will be given in one of the later volumes of this history, *sub voce* "Training."

The Nursing Service of the American Red Cross forwarded to the Surgeon General's Office the names and credentials of 17,956 nurses as rapidly as they became available for service.[107] As the names and credentials were received, transportation requests and orders were issued by the Surgeon General's Office, directing the nurses to proceed to their first station for duty. The stations to which they were sent were selected from the standpoint of transportation involved and the need of the respective hospitals. At the same time that reserve nurses were being assigned to duty with the Army Nurse Corps, nurses in fairly large numbers were being appointed directly into the corps through the Surgeon General's Office. In forming the personnel of the general, base, and camp hospitals, an endeavor was made to send nurses who were specially skilled in operating-room technique and in the administration of anesthetics to the hospitals where their services could be best utilized, and the commanding officers of the respective stations were informed of their special qualifications. Nurses were advantageously used as anesthetists in Army hospitals during the war as they released medical officers for other work. Special courses in the administrations of anesthetics were given in the large general and base hospitals,[112] and at St. Mary's Hospital, Rochester, Minn.[112] The nursing personnel of units and base hospitals for the care of psychiatric, orthopedic, eye, ear, nose, and throat cases were early organized both at home and abroad.

Nurses with wide executive experience were needed for the administration of the nursing service in the large Army hospitals. Some chief nurses were drawn from those already in the corps, but many were brought in from civilian hospitals.

For the first time in the history of the Army, graduate dietitians were employed in our Army hospitals of this country and abroad.[113] This service was under the jurisdiction of the Army Nurse Corps Section and was administered by the superintendent of the corps until November, 1918, at which time a supervising dietitian was appointed and assigned to this duty and transfer. In addition to the performance of the administrative duties of the office, the supervising dietitian inspected the dietary department of each of 30 Army hospitals.[114]

In June, 1917, a mobilization station for nurses ordered overseas was established at Ellis Island, in New York Harbor,[115] and accommodated approximately 350 nurses. This place was later taken over by the Army for hospital purposes only, necessitating the establishment of another station at 120 Madison Avenue, New York City, which accommodated 130 nurses.[116] Later this house was abandoned and the Knott chain of hotels was selected for mobilization purposes, with headquarters at the Hotel Albert, University Place and Eleventh Street, New York City.[117] The station functioned under the surgeon, port of embarkation, Hoboken, N. J.[118]

Early in the war information was received by the American Ambassador to England that a passport was essential for every nurse going to Europe. It was necessary to accompany each application for passport with a certificate of birth, four photographs, and the authority directing the nurse to proceed abroad; it was also necessary that each nurse, upon making such application, be accompanied by a person who had known her for two years. Birth certificates were not always available, and much time was consumed in procuring them, causing too great a delay of the nurses at the port of embarkation. In August, 1917, upon recommendation of the superintendent, Army Nurse Corps, the Surgeon General requested information from the Secretary of State as to whether, in view of the time involved by the procedure necessary to procure a passport, a certificate of identification could not be issued to uniformed Army nurses in lieu of passport. This plan was approved by the British and French Governments, so that United States Army nurses wearing a military uniform were authorized to enter those countries without passports, provided they carried certificates of identification, issued by the War Department, with photographs.[119]

Shortly after the declaration of war, six base hospitals, with a total of 436 nurses, were sent to Europe for service with the British forces. The hospitals designated were:[120]

Base Hospital No. 2, of Presbyterian Hospital, New York, N. Y.
Base Hospital No. 4, of Lakeside Hospital, Cleveland, Ohio.
Base Hospital No. 5, of Peter Bent Brigham Hospital, Boston, Mass.
Base Hospital No. 10, of University of Pennsylvania Hospital, Philadelphia, Pa.
Base Hospital No. 12, of Northwestern University Hospital, Chicago, Ill.
Base Hospital No. 21, of Washington University Medical School Hospital, St. Louis, Mo.

Early in 1917 the following base hospitals, with a total of 830 nurses, were sent to France for duty with the American Expeditionary Forces:[121]

Base Hospital No. 6, Massachusetts General Hospital, Boston, Mass.
Base Hospital No. 8, New York Post-Graduate Hospital, New York City.
Base Hospital No. 9, New York Hospital, New York City.
Base Hospital No. 15, Roosevelt Hospital, New York City.
Base Hospital No. 17, Harper Hospital, Detroit, Mich.
Base Hospital No. 18, Johns Hopkins Hospital, Baltimore, Md.
Base Hospital No. 23, Buffalo General Hospital, Buffalo, N. Y.
Base Hospital No. 27, University of Pittsburgh, Medical School, Pittsburgh, Pa.
Base Hospital No. 31, Youngstown Hospital, Youngstown, Ohio.
Base Hospital No. 32, City Hospital, Indianapolis, Ind.
Base Hospital No. 34, Episcopal Hospital, Philadelphia, Pa.
Base Hospital No. 36, College of Medicine, Detroit, Mich.
Base Hospital No. 39, Yale Mobile Unit, New Haven, Conn.

Base Hospital No. 8 of the Post-Graduate Hospital, New York City, with 65 nurses, sailed for Europe in July, 1917, on the steamship *Saratoga*.[121] This boat was accidentally rammed in New York Harbor by the incoming steamship *Panama*. This necessitated the immediate evacuation of the ship. The nurses were taken aboard all sorts of small craft in the bay and returned to Ellis Island next day, many of them in a state bordering on shock. That no lives were lost is undoubtedly due to the wonderful discipline displayed by the nurses when the order to abandon ship was given. With but few exceptions, and because of having to leave the ship with no time to collect their belongings, they lost practically everything they owned. The War Council of the American Red Cross, however, immediately appropriated a sum to re-equip the entire group, and gave $30 in gold to each nurse, there being no law at that time by which the Government could reimburse them for the losses sustained. The act "to provide for the settlement of the claims of officers and enlisted men of the Army for the loss of private property destroyed in the military service of the United States" was amended by act of July 9, 1918, and members of the Army Nurse Corps who lost private property in the military service were entitled to have it replaced in kind, or be reimbursed to the amount of its value, as provided in Army Regulations 726, as amended.[122]

The nursing personnel of Base Hospitals Nos. 1 to 50 were organized by the Red Cross Nursing Service.[123] Each of these hospitals had a personnel of 65 nurses, which number was later increased to 100. By August, 1918, these base hospitals had been sent overseas. The nurses for Base Hospitals Nos. 51 to 79, and the special hospitals No. 102 for duty in Italy, No. 114 for orthopedic cases, No. 115 for head surgery, No. 116 for fracture cases, and No. 117 for psychiatric cases, were organized in the Army Nurse Corps Section of the Surgeon General's Office.[124] The personnel was selected from nurses on duty in Army hospitals in this country who had demonstrated their professional and physical fitness for overseas service. Before sending her into the difficult position of nursing in the complex military establishment overseas it was found of benefit to the nurse, and therefore indirectly to the service, to give her the opportunity to obtain experience in these large military hospitals, nearly every one of which was larger than any civilian hospital in the United States.

As soon as organized, these hospitals were mobilized and sent overseas, and, from time to time, many special nursing detachments and replacement units were organized and sent to Europe. In the autumn of 1917, a large group of nurses was sent to form the personnel of the American Red Cross Military Hospitals Nos. 1, 2, and 3, in France, which were originally organized by the American Red Cross, but which were brought under military control shortly after the United States entered the war.[125]

Upon arrival overseas the nurses came under the jurisdiction of the chief surgeon, American Expeditionary Forces. The assignment of base hospitals and units and the detailing of nurses were handled by the chief surgeon and his staff. At the request of the chief surgeon, in October, 1917, a supervisor of nursing service was sent overseas for duty in his office.[126] Her status at this time was that of chief nurse, but later she was made director of nurses, American Expeditionary Forces, by authority of act of Congress, July 9, 1918.

In June, 1918, a base hospital with a nursing personnel of 49 was sent to Porto Rico for duty in the cantonment hospital there.[127]

In October, 1918, Evacuation Hospital No. 17, with a nursing personnel of 26, was sent to Siberia for duty with the American Expeditionary Forces there.[128]

In response to a request from the Chief of Transportation Service, in June, 1919, 63 nurses were assigned to trans-Atlantic transports.[129]

On November 11, 1918, the day the armistice was signed, the Army Nurse Corps reached the zenith, the number in the corps at that date being as follows:[130]

Regular nurses	3, 524
Reserve nurses	17, 956
Total	21, 480

11,235 distributed among 174 stations in this country, Philippines, Hawaii, and Porto Rico.
10,245 serving overseas, en route, or awaiting transportation at ports of embarkation.

The distribution on November 15, 1918, before the demobilization, consequent upon the signing of the armistice, was begun in this country and overseas as follows:[130]

Number of nurses.

2, 431 serving in 37 general hospitals.
6, 610 serving in 38 camp and base hospitals.
568 serving in 41 post hospitals, arsenals, and recruit depots.
756 serving in 5 embarkation hospitals.
192 serving in 3 debarkation hospitals.
490 serving in 36 aviation stations.
96 serving in 9 miscellaneous stations such as the Surgeon General's Office and Attending Surgeon's Office, Washington, D. C.; nurses' mobilization station, Hotel Albert, New York, etc.
32 serving in 3 stations, Philippine Department.
16 serving in 1 station, Hawaiian Department.
44 serving in 1 station, Porto Rico.
742 serving with British forces.
14 serving with French forces.
8, 044 serving with American Expeditionary Forces.
1, 445 awaiting transportation, en route to mobilization stations, or under orders to mobilize.

21. 480 Total.

This distribution does not include nurses on final leave or under orders to proceed to their homes for discharge or relief from active service.

When the armistice was signed 1,445 nurses were at the port of embarkation awaiting sailing orders, en route from mobilization stations, or under orders to mobilize. Of those awaiting sailing orders 650 were sent overseas upon the request of the chief surgeon, American Expeditionary Forces.[131] The remainder of those who had reported at the mobilization station were distributed to near-by hospitals. The orders of others who had not yet reported were revoked.

After the signing of the armistice, November 11, 1918, many hospitals were closed, and the corps was gradually reduced in size as the need for the services of nurses decreased, until, on June 30, 1919, there were in the corps approximately 2,084 regular nurses and 7,532 reserve nurses, making a total of 9,616, including 3,448 overseas.[132] This number does not include those who were under orders for discharge, en route to their homes for discharge or relief from active service, or on final leave, which would approximate 330 in number. The majority of nurses who returned from overseas requested to be sent to their homes for discharge or relief from active service, though a few requested transfer to military hospitals in this country, signifying their desire to remain in the corps. After the armistice was signed no more nurses were assigned to active service or appointed in the Regular Corps.

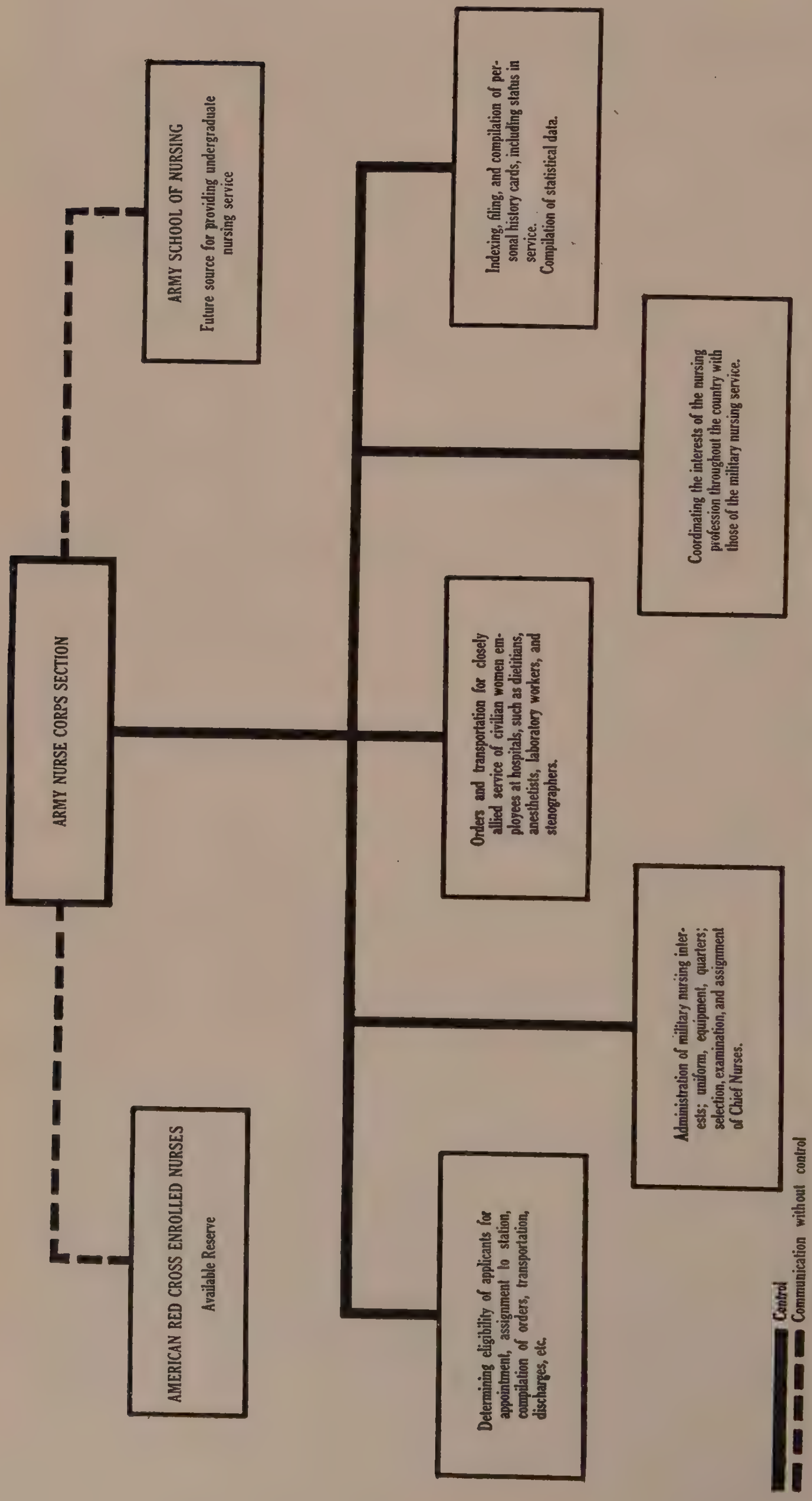
ARMY NURSE CORPS SECTION
AMERICAN RED CROSS ENROLLED NURSES
Available Reserve
ARMY SCHOOL OF NURSING
Future source for providing undergraduate nursing service
Determining eligibility of applicants for appointment, assignment to station, compilation of orders, transportation, discharges, etc.
Administration of military nursing interests; uniform, equipment, quarters; selection, examination, and assignment of Chief Nurses.
Orders and transportation for closely allied service of civilian women employees at hospitals, such as dietitians, anesthetists, laboratory workers, and stenographers.
Coordinating the interests of the nursing profession throughout the country with those of the military nursing service.
Indexing, filing, and compilation of personal history cards, including status in service.
Compilation of statistical data.
Control
Communication without control

CHART IV.—Army Nurse Corps Section, Personnel Division, Surgeon General's Office, June 1918.

During the war, from April 6, 1917, to November 11, 1918, 1,210 nurses were discharged or relieved from active service in the Military Establishment for various reasons.[133] The majority were relieved because they were physically unfit for service.

In December, 1918, the mobilization station in New York City for nurses ordered overseas was changed into a demobilization station for the reception of nurses returning to this country for termination of their services in the Military Establishment, or to await further orders.[134]

To avoid delay at ports of debarkation, authority was given to the surgeon, ports of embarkation, Hoboken, N. J., and Newport News, Va., to send all nurses arriving from overseas to their homes for separation from the service on request.[135] The demobilization of nurses in this country could not be effected as rapidly as with those returning from overseas, because of the number of wounded soldiers returning to the United States for hospital treatment.

In April, 1919, owing to the large reduction in the clerical force in the Army Nurse Corps Section of the Surgeon General's Office, it was found necessary to decentralize some of the work connected with the demobilization of the corps. Regulations were amended so that the discharge or relief of nurses from active service could be effected at the stations at which they were serving, and in the case of nurses returning from overseas, at ports of debarkation.[136]

As members of the Army Nurse Corps are beneficiaries of the War Risk Insurance, on November 29, 1918, the Surgeon General informed all commanding officers of hospitals that members of the Army Nurse Corps ordered to their homes for discharge from active service must have physical examinations on Form 135–3, A. G. O., under provisions of War Department Circular 73, November 18, 1918.[137]

The administrative organization of the Army Nurse Corps Section is given in Chart IV.

PERSONNEL.[k]

(April, 1917, to December, 1919.)

COMMISSIONED PERSONNEL SECTION.

Noble, Robert E., Maj. Gen., M. D., chief.
Miller, Reuben B., Col., M. C., chief.
Reynolds, Charles R., Col., M. C., chief.

Caldwell, B. W., Col., M. C.
Pipes, H. F., Col., M. C.
Bull, R. C., Lieut. Col., M. C.
Coulter, J. S., Lieut. Col., M. C.
Haggard, W. D., Lieut. Col., M. C.
Jones, Glenn I., Lieut. Col., M. C.
Mitchell, L. B., Lieut. Col., M. C.
Walsh, William H., Lieut. Col., M. C.

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[k] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the heads of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Ayars, C. W., Maj., S. C.
Brown, Samuel A., Maj., M. C.
Denison, Walcott, Maj., M. C.
Dyer, Isadore, Maj., M. C.
Green, F. R., Maj., M. C.
Horn, J. E., Maj., S. C.
McLean, J. D., Maj., M. C.
Noyes, E. A., Maj., M. C.
Patterson, Paul, Maj., M. C.
Quickel, H. L., Maj., M. C.
Roby, A. A., Maj., S. C.
Rose, J. H., Maj., M. C.
Scull, James A., Maj., S. C.
Waite, F. C., Maj., S. C.
Albers, Albert H., Capt., S. C.
Cook, E. L., Capt., M. C.
Doyle, John F., Capt., S. C.
Hathaway, Joseph H., Capt., M. C.
Kelly, Maurice, Capt., S. C.
Miller, R. F., Capt., S. C.
Nugent, E. T., Capt., S. C.
Sands, John R., Capt., S. C.
Schutte, L. B., Capt., S. C.
Weever, George S., Capt., M. C.
Willis, E. A., Capt., M. C.
Beaver, C. E., First Lieut., M. C.
Bryans, Wm. W., First Lieut., S. C.
Bush, Archer C., First Lieut., M. C.
Kernan, W. H., First Lieut., S. C.
Malcolm, Robert, First Lieut., M. C.
Woody, McIver, First Lieut., M. C.

ENLISTED PERSONNEL SECTION.

Arnold, H. D., Lieut. Col., M. C., chief.
Coulter, J. S., Lieut. Col., M. C., chief.

Waiter, F. C., Maj., S. C.

ARMY NURSE CORPS.

Stimson, Julia C., superintendent.
Thompson, Dora E., superintendent.
Aubert, Lillian, assistant superintendent.
Bell, Bessie S., assistant superintendent.
Milliken, Sayres L., assistant superintendent.
Reid, Elizabeth D., assistant superintendent.
Rutley, Edith H., assistant superintendent.
Harding, Elizabeth, chief nurse.
Mury, Edith A., chief nurse.

Ames, May G.
Barnes, Harriet H.
Bates, Emily A.
Barkan, Olga E.
Burke, Maude D.
Catlin, Mildred D.
Chaplin, Leonora A.
Clendenning, Edith.
Curley, Teresa I.
Duffy, Alice E.
Du Paul, Mary E.
Fitzgerald, Teresa.
Gavin, Mary.
Haines, Sarah A.
Halloran, Sarah E.
Harris, Mathilda.
Kenny, Elizabeth J.
Kilfoil, Grace.
Lewis, Mary E.
McAdam, Katherine B.
McCarthy, Katherine.
McGlone, Charlotte E.
Milheim, Madolin E.
Milligan, Carolyn.
Morris, Lucy.
Pierson, Marietta H.
Prentiss, Alice M.
Ramer, Carolyn L.
Rulon, Blanche S.

ARMY SCHOOL OF NURSING.

Goodrich, Annie W., dean.
Stimson, Julia C., dean.
    Barnes, Harriet.
    Burke, Maude.
    Burgess, Elizabeth.
    Howard, Evelyn.
    Stewart, Ellen B.

REFERENCES.

(1) Bull. No. 16, W. D., June 22, 1916.
(2) Weekly reports, Personnel Division. On file, Record Room, S. G. O., Weekly Report File.
(3) G. O., No. 90, W. D., July 12, 1917.
(4) Report of the Acting Chief of the Militia Bureau relative to the National Guard and the United States Guards, 1918, 12.
(5) Ibid., 1918, 14.
(6) Ibid., 1918, 21.
(7) Memo. from the Surgeon General to Senator Chamberlain, September 20, 1917. Subject: Preparation for War of the Medical Department of the Army. On file, Record Room, S. G. O., 321.6 (Medical Department).
(8) List of examining boards for the Medical Reserve Corps. On file, Record Room, S. G. O., 334.1 (Examining Boards).
(9) Circular, Form F, "Information Relating to Appointments in the Medical Reserve Corps, Section on Officers' Reserve Corps of the Army." On file, Record Room, S. G. O., 210.1–1 (Appointments). (Circular not dated).
(10) Circular letters, S. G. O.: (*a*) To the President of all Boards for the Examination of Applicants for the Medical Reserve Corps, April 23, 1917; (*b*) Form G, Instructions Governing the Examination of Applicants for the Medical Reserve Corps, May 25, 1917; (*c*) General Information for the Examining Boards, September 1, 1917; (*d*) Instructions to Presidents of Examining Boards. On file, Record Room, S. G. O., 210.1–1.
(11) Manual for the Medical Department, 1916, par. 15; Bull. No. 9, W. D., February 2, 1917, p. 8.
(12) Letter from The Adjutant General of the Army to the various staff corps, December 4, 1917. Subject: Citizenship of Applicants for Officers' Reserve Corps. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(13) Memo. from the Chief of Staff, January 4, 1918. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(14) Second indorsement, Adjutant General's Office to the Surgeon General of the Army. On file, Record Room, S. G. O., 201 (Amberg, Samuel).

(15) First indorsement, War Department, S. G. O., May 8, 1918, to The Adjutant General of the Army. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(16) Third indorsement, War Department, A. G. O., May 20, 1918, to the Surgeon General. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(17) Letter from The Adjutant General to the Surgeon General. June 24, 1918. Subject: Commissioning of Applicants Born in Alien Enemy County or in a Country Allied Thereto. On file, Commissioned Personnel Division, S. G. O., 210.1–1 (Appointments).

(18) Letter from The Adjutant General of the Army to the Surgeon General, January 23, 1918. Subject: Appointments in National Army. On file, Commissioned Personnel Division, S. G. O., 210.1–1 (Appointments).

(19) Data (confidential): Letter, Adjutant General to Surgeon General, September 27, 1917. Subject: Naturalization of Aliens, Including Professionals. On file, Record Room, S. G. O., 210.1–1. W. D. Bull. No. 28, May 18, 1918.

(20) Letter from The Adjutant General of the Army to the Surgeon General, United States Army, May 7, 1918. Subject: Applications for Commissions in the Several Staff Corps. On file, Commissioned Personnel Division, S. G. O., 210. 1–1 (Appointments).

(21) G. O., No. 9, Headquarters of the Army, Adjutant General's Office, Washington, February 6, 1901.

(22) G. O., No. 67, W. D., May 2, 1908.

(23) Letter from the Surgeon General to Judge Advocate General, August 10, 1917. Subject: Female Physicians as Contract Surgeons in the United States Army; First indorsement Judge Advocate General to the Surgeon General, August 13, 1917. Copy on file, Historical Division, S. G. O.

(24) Correspondence on uniform for contract surgeons and specifications for uniform for contract surgeons (female). On file, Historical Division, S. G. O.

(25) G. O., No. 80, W. D., June 30, 1917.

(26) Weekly reports, Personnel Division, S. G. O. On file, Record Room, S. G. O., Weekly Report File.

(27) G. O., No. 75, W. D., June 23, 1917.

(28) G. O., No. 75, W. D., June 23, 1917, as amended by G. O., No. 124, W. D., September 20, 1917.

(29) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1111.

(30) Bull. No. 43, W. D., July 22, 1918.

(31) Letter from the Surgeon General to Director General of Military Relief American Red Cross, Washington, D. C., July 28, 1917. Subject: Commissions for Personnel of Base Hospitals, Hospital Units, and Ambulance Companies. On file, Record Room, S. G. O., 197052 (Old Files).

(32) Correspondence on Advisory Board. On file, Record Room, S. G. O., 135096, 143365 and 156772 (Old Files).

(33) Memo. from the Secretary of War to the Surgeon General, United States Army. October 16, 1917. Subject: Return of Applications. First indorsement, A. G. O., to the Surgeon General, October 19, 1917. Subject: Discontinuance of Commissions. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(34) Memo. from executive assistant to Chief of Staff to The Adjutant General. August 14, 1918. Subject: Suspension of Consideration of Appointments of Applicants for Commission from Civil Life. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(35) Letter from The Adjutant General to the Surgeon General. September 16, 1918. Subject: Applications for Appointment from Civil Life. On file, Record Room, S. G. O., 210.1–1 (Appointments).

(36) Second indorsement, Adjutant General of the Army, to the Surgeon General of the Army, September 27, 1918. On file, Record Room, S. G. O., 210.14 (Commissions).

(37) Statistical Report, Week of November 16, 1918. On file, Record Room, S. G. O., Weekly Report File.

(38) Letter from the Surgeon General to individual medical officers, dated when sent. Subject: Promotions. On file, Record Room, S. G. O., 210-2 (Promotions).

(39) Consolidated Tables of Organization. On file, Commissioned Personnel Division, S. G. O., 320.3-1.

(40) Act of April 3, 1908 (35 Stats. 66); Bull. 16, War Department, June 22, 1916, sec. 10.

(41) Cablegram No. 1780, par. 1, October 11, 1918. On file, Record Room, S. G. O., Cablegram File.

(42) Cablegram No. 2147, par. 3, November 5, 1918. On file, Record Room, S. G. O., Cablegram File.

(43) Telegram from The Adjutant General to commanding generals of all territorial departments, replacements, central officers' training schools, camp headquarters, depot brigades, ports of embarkation, and to commanding officers of all other units of independent commands within the limits of the United States, the commanding general Philippine Department, and commanding general Panama Canal Department, November 15, 1918. Subject, Suspension of Recommendations of Emergency Promotions and Appointments. On file: Miscellaneous Section, Mail and Record Division, A. G. O., 210.2.

(44) Cir. No. 79, W. D., February 14, 1919. On file, Record Room, S. G. O.

(45) Correspondence on promotions. On file, Record Room, S. G. O., 210.2-1 (Promotions).

(46) Based on figures in Weekly Statistical Report, November 16, 1918, Commissioned Personnel Division, S. G. O. On file, Record Room, S. G. O., Weekly Report File.

(47) Special Statistical Report No. 131, April 7, 1919. Subject: Rank Regular Army Officers for the Emergency. On file, Statistical Division, General Staff, Report File.

(48) G. O., 168, Section III, December 29, 1917.

(49) Memo. for The Adjutant General from Chief of Staff, December 2, 1918. On file, Record Room, S. G. O., 210.-2 (Promotions).

(50) Bull. No. 16, W. D., June 22, 1916.

(51) Copies of commissions for following officers: Charles Richard, Henry P. Birmingham, Rudolph G. Ebert, and Alfred E. Bradley. On file, Record Room, S. G. O., 201 (Name of Officer).

(52) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1114.

(53) Bull. No. 43, W. D., July 22, 1918.

(54) Cir. No. 75, par. 2, W. D., November 20, 1918.

(55) Cir. No. 124, W. D., December 7, 1918.

(56) G. O., No. 73, W. D., August 7, 1918.

(57) Memo. from the Chief of Staff to the Surgeon General, November 25, 1918. Subject: Discharge of Officers of the Medical Corps and Reserve Commissions for Same. On file, Record Room, Office of Chief of Staff, 968 F (Medical Reserve Corps).

(58) Second indorsement, Office of Provost Marshal General to Adjutant General, June 4, 1917; and third indorsement, W. D., A. G. O., to Surgeon General, July 13, 1917. On file, Record Room, S. G. O., 175344 (Old Files).

(59) Letter from the Surgeon General of the Army, to Provost Marshal General, United States Army, August 23, 1917. Subject: Medical Students. On file, Record Room, S. G. O., 1753144 (Old Files).

(60) Orders, W. D., S. G. O., September 4, 1917. On file, Personnel Division, Enlisted Section, S. G. O.

(61) Bull. No. 61, W. D., Section V, October 23, 1917.

(62) New Selective-Service Regulations, effective November 8, 1917. On file, Law Library, Office of the Judge Advocate General.

(63) Regulations Governing Voluntary Enlistments in the Enlisted Reserve Corps of the Medical Department of Registrants Who Are Medical Students, Hospital Internes, Dentists, Dental Students, Veterinarians, or Veterinary Students, December 15, 1917. (Issued by the Surgeon General.) On file, Enlisted Section, Personnel Division, S. G. O.

(64) Letter from the American Institute of Dental Teachers to the Surgeon General, January 31, 1918. Subject: Classification of Dental Schools. On file, Enlisted Section, Personnel Division, S. G. O.

(65) Letter from the Surgeon General to Henry L. Banzhof, secretary treasury, the Dental Educational Council of America. March 2, 1918. Subject: Dental Schools. On file, Record Room, S. G. O., 080 (Dental Educational Council of America) (T).

(66) Memo. from the Surgeon General to the assistant and chief clerk, War Department, October 15, 1918. Subject: Cincinnati College of Dentistry and Position of the Surgeon General in Reference to Dental Schools. On file, Record Room, S. G. O., 080 (College of Dental Surgery, Cincinnati, Ohio) (W).

(67) Regulations Governing Entrance to the Veterinary-Inspector Examination effective on and after March 1, 1917, published by Department of Agriculture (Contribution from the Bureau of Animal Industry). Copy on file, Personnel Division, Bureau of Animal Industry, Department of Agriculture.

(68) List of "well-recognized" veterinary schools. On file, Enlisted Section, Personnel Division, S. G. O.

(69) Notice regarding minimum entrance requirements of veterinary schools, issued by the Surgeon General, April 17, 1918. On file, Enlisted Section, Personnel Division, S. G. O.

(70) Memo. from the Surgeon General to the deans of "well-recognized" medical schools, May 24, 1918. Subject: Students to be Enlisted in Medical Enlisted Reserve Corps. On file, Enlisted Section, Personnel Division, S. G. O.

(71) Memo. issued by the Surgeon General, December 7, 1918. Subject: Enlistment of Medical, Dental, and Veterinary Students in the Medical Enlisted Reserve Corps. On file, Enlisted Section, Personnel Division, S. G. O.

(72) Memo. issued by the Surgeon General, May 4, 1918. Subject: Revocation of Authority Granted by Memo. from this Office, December 7, 1917. On file, Enlisted Section, Personnel Division, S. G. O.

(73) Telegram from The Adjutant General, United States Army, to all department commanders, superintendent of Military Academy, disciplinary barracks, recruit depots, and recruiting officers at all main recruiting stations, August 8, 1918. "Discontinue immediately all volunteer enlistments and acceptance of men who have not yet attained their forty-sixth birthday." On file, Record Room, S. G. O., 432 (Enlistments). Telegram from the Surgeon General, United States Army, August 28, 1918, to S. Shusheim, New York, N. Y.: "Medical Enlisted Reserve Corps now closed on account discontinuation of enlistments." On file, Record Room, S. G. O., 342.1 (Medical Enlisted Reserve Corps).

(74) Letter from the Surgeon General to the dean (name of school), March 1, 1918. Subject: Students. On file, Enlisted Section, Personnel Division, S. G. O. Report of the Section on Medical Education, Personnel Division, S. G. O. On file, Enlisted Section, Personnel Division, S. G. O.

(75) S. O., No. 264, par. 155, W. D., November 12, 1917.

(76) G. O., No. 15, W. D., February 10, 1918.

(77) G. O., No. 79, Par. II, W. D., August 24, 1918.

(78) Memo. from Lieut. Col. H. D. Arnold, M. C., to Col. R. B. Miller, M. C., Officer in Charge Personnel Division, S. G. O., October 5, 1918. Subject: Transfer of Medical Enlisted Reserve Corps to Students' Army Training Corps. On file, Record Room, S. G. O., 327.3 (Medical Students).

(79) Telegram from The Adjutant General to commanding general, Northeastern Department, November 9, 1918. Subject: Transfer of Members of Medical Enlisted Reserve Corps to Students' Army Training Corps. Similar telegram to commanding generals of all territorial departments. On file, Miscellaneous Section, Mail and Record Division, A. G. O., 000.862 (Students' Army Training Corps).

(80) Third indorsement, W. D., S. G. O., to the Surgeon General of the Public Health Service, December 7, 1918. Subject: Educational Control of Medical Enlisted Reserve Corps. On file, Record Room, S. G. O., 342.1 (Medical Enlisted Reserve Corps).

(81) Letter from The Adjutant General to the commanding general, Northeastern Department, December 11, 1918. Subject: Discharge of Members of the Enlisted Reserve Corps on Inactive List. Similar letter was sent to all department commanders. On file, Enlisted Section, Personnel Division, S. G. O.

(82) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1111.

(83) Bull. No. 16, W. D., June 22, 1916.

(84) Letter from the Surgeon General of the Army to The Adjutant General of the Army, May 21, 1917. Subject: Increase of the Enlisted Personnel, Medical Department. First indorsement thereon, Adjutant General's Office, June 15, 1917. On file, Record Room, S. G. O., 128732–T (Old Files).

(85) Annual Report of the Surgeon General, United States Army, 1918, 387, Table 160.
(86) Annual Report of the Acting Chief of the Militia Bureau relative to the National Guard and the United States Guards, 1918, 21.
(87) Bull. No. 32, W. D., May 24, 1917.
(88) G. O., No. 75, W. D., June 23, 1917.
(89) G. O., No. 124, W. D., September 30, 1917.
(90) G. O., No. 80, W. D., June 30, 1917.
(91) G. O., No. 102, W. D., August 4, 1917.
(92) G. O., No. 130, W. D., October 4, 1917.
(93) G. O., No. 161, W. D., December 22, 1917.
(94) G. O., No. 58, W. D., June 22, 1918.
(95) Table compiled from classification of draft, based on "Trade specifications and occupational index." On file, Enlisted Section Personnel Division, Miscellaneous File (not numbered).
(96) Circular letter from the Surgeon General to all division surgeons, October 3, 1917. Subject: Training of Sanitary Personnel of Division. On file, Record Room, S. G. O., Document File.
(97) Circular letter from the Surgeon General to commanding officer of all hospitals, October 15, 1917. Subject: Personnel. On file, Record Room, S. G. O., Document File.
(98) Annual Report of the Surgeon General, United States Army, 1918, 408.
(99) Ibid., 409.
(100) Manual for the Medical Department, 1916, par. 41 (Changes, Manual for the Medical Department, 103, September 29, 1917) and par. 50.
(101) A. R. 1409, 1913 (Changes Army Regulations No. 46).
(102) Annual Report of the Surgeon General, United States Army, 1918, 393.
(103) Bull. No. 32, W. D., May 24, 1917.
(104) A Message from the Surgeon General of the Army to the enlisted men of the Medical Department, February 11, 1918. Subject: Necessity of Retention of Personnel in the Service. On file, Record Room, S. G. O., 321.6–1 (Medical Department).
(105) 31 Stats., 753.
(106) Weekly reports, Numerical Status of Army Nurse Corps. On file, Army Nurse Corps Section, Personnel Division, S. G. O.
(107) Weekly report, Army Nurse Corps, Nurses on Duty, November 15, 1918. On file, Record Room, S. G. O., Weekly Report File.
(108) Manual for the Medical Department, 1916, par. 102, and 536.
(109) Letter from the Acting Surgeon General, United States Army, to the general manager, American Red Cross, Washington, D. C., October 17, 1918. Subject: Equipment for Nurses' Aides. On file, Record Room, S. G. O., 231. (Reconstruction Aides).
(110) Memo. from the Surgeon General, United States Army, to the Secretary of War, May 24, 1918. Subject: Approval of Plan for Army School of Nursing; and indorsement of Secretary of War, May 25, 1918, which is approval thereof. On file, Record Room, S. G. O., 352.4 (Army School of Nursing).
(111) Letter from the Surgeon General, United States Army, to the Secretary of War, March 4, 1918. Subject: Establishment of Dispensary and Emergency Station; and indorsement of Secretary of War, March 6, 1918. On file, Record Room, S. G. O., 632, Washington, D. C. (F).
(112) Letter from the Acting Surgeon General, United States Army, to the commanding officer, United States Army General Hospital, San Francisco, Calif., October 3, 1918. Subject: Reports of Instruction in Anesthesia. On file, Record Room, S. G. O., 730. (Anesthesia, General.) Letter from Maj. E. S. Judd, M. C., to Maj. R. P. Sullivan, M. C., March 22, 1918. Subject: Course in Administration of Anesthetics. On file, Record Room, S. G. O., 353. (Rochester, Minn.) (F).
(113) Letter from chief nurse, Walter Reed General Hospital, Takoma Park, D. C., to the commanding officer, Walter Reed General Hospital, April 4, 1917. Second indorsement, from the Surgeon General, United States Army, to the commanding officer, Walter Reed General Hospital, April 9, 1917. On file, Record Room, S. G. O., 167608 (Old Files).
(114) Inspection reports of dietary department of Army hospitals. On file, Army Nurse Corps Section, Personnel Division, S. G. O.

(115) Letter from Assistant Secretary of Labor to the Secretary of War, June 12, 1917. Subject: Arrangements for Housing Nurses at Ellis Island. On file, Record Room, S. G. O., 181333 E (Old Files).

(116) Letter from the surgeon, port of embarkation, Hoboken, N. J., to superintendent, Army Nurse Corps, December 20, 1917. Subject: Nurses' Station at 120 Madison Avenue, New York City. On file, Record Room, S. G. O., 211 (Nurses, New York City) (F).

(117) Letter from the Surgeon General, United States Army, to The Adjutant General, April 2, 1918. Subject: Mobilization Stations, Army Nurse Corps; third indorsement, War Department, Adjutant General's Office, to the commanding general, Eastern Department, Governors Island, N. Y., April 10, 1918. On file, Record Room, S. G. O., 322.3 (Army Nurse Corps).

(118) Letter from the Surgeon General, United States Army, to The Adjutant General, April 2, 1918, par. 3. Subject: Mobilization Stations, Army Nurse Corps; eighth indorsement, from office of the surgeon, port of embarkation, Hoboken, N. J., May 10, 1918. On file, Record Room, S. G. O., 322.3 (Army Nurse Corps).

(119) First indorsement, A. G. O., to the Surgeon General, United States Army. Subject: Certificates. On file, Record Room, S. G. O., 344 (Certificates).

(120) Letter from the Surgeon General to The Adjutant General, dated June 15, 1917. Subject: Reserve Nurses for Duty with British Forces. On file, Record Room, S. G. O., 182822 (Old Files).

(121) Base Hospitals Sent to France Early in 1917: List of Sailings. On file, Army Nurse Corps, S. G. O.

(122) A. R. 726, as amended by Changes No. 87, April 3, 1919.

(123) First indorsement, A. G. O., to the Surgeon General of the Army, July 2, 1917. Subject: Organization of Base Hospitals Through the Red Cross. On file, Record Room, S. G. O., 322.37 (Misc.).

(124) Correspondence on base hospitals. On file, Record Room, S. G. O., 172158 (Old Files).

(125) Correspondence on American Red Cross military hospitals, Nos. 1, 2, and 3. On file, Army Nurse Corps Section, Personnel Division, S. G. O.

(126) Cablegram No. 197, par. 3, October 4, 1917, from General Pershing. On file, Record Room, S. G. O., Cablegram File. Cablegram to General Pershing, October 6, 1917. Subject: Assignment of Nurses. On file, Record Room, S. G. O., Cablegram File.

(127) Letter from the Surgeon General to The Adjutant General, May 23, 1918. Subject: Nurses to be Sent to Porto Rico. On file, Record Room, S. G. O., 211 (Nurses, San Juan, P. R.).

(128) Letter from Acting Surgeon General to Operations Division, General Staff, October 2, 1918. Subject: Nurses for Siberia. On file, Record Room, S. G. O., Cablegram File (M. of T. 10/2/18).

(129) Weekly report Army Nurse Corps, June 20, 1919. On file, Record Room, S. G. O., Weekly Report File (Army Nurse Corps).

(130) Weekly report Army Nurse Corps, nurses on duty November 15, 1918. On file, Record Room, S. G. O., Weekly Report File (Army Nurse Corps).

(131) Letter from The Adjutant General to the Surgeon General, United States Army, November 26, 1918. Subject: Shipping Schedule No. 11, November, 1918 (M–1210, X–650, Nurses, Medical Department). On file, Mail and Record Division A. G. O., 370.5 (Miscellaneous Division).

(132) Weekly report Army Nurse Corps, nurses on duty, June 27, 1918. On file, Record Room, S. G. O., Weekly Report File.

(133) Compiled from card record of discharged nurses. On file, Army Nurse Corps Section, Personnel Division, S. G. O.

(134) Third indorsement, A. G. O., to Surgeon General, United States Army, December 23, 1918. On file, Army Nurse Corps Section, Personnel Division, S. G. O.

(135) Letter from the Surgeon General, United States Army, to the surgeon, port of embarkation, Hoboken, N. J., January 4, 1919. Subject: Discharge of Nurses Returning from Overseas. On file, Army Nurse Corps Section, Personnel Division, S. G. O.

(136) Circular Letter, No. 186, W. D., S. G. O., April 25, 1919.

(137) Memo. from the Surgeon General, United States Army, to department surgeons, surgeons, ports of embarkation; surgeons, independent posts and stations; commanding officers, base and general hospitals, November 29, 1918. Subject: Physical Examination of Army Nurses Preceding Separation from the Service. On file, Record Room, S. G. O., 211 (Nurses).

CHAPTER IV.

DENTAL DIVISION.

Prior to the World War the affairs of the Dental Corps were administered as part of the routine work of the Personnel Division. On August 9, 1917, the Dental Section of this division was organized with the assignment of a medical officer to duty in this connection.[1] The Dental Section became the Dental Division on November 24, 1919.[2]

Much of the preliminary work in the expansion of the Dental Corps, including the development of the Dental Reserve Corps, was accomplished by members of the Dental Committee, General Medical Board, Council of National Defense, in cooperation with the dental profession of the country, through the officers and membership of the National Dental Association.

On April 6, 1917, the United States Army had 86 dental officers, 18 of whom were captains and 68 first lieutenants.[3] Although dental officers were permitted to advance to the grade of major, this was possible only after such officers had had a record of 24 years of service, and then the number was limited to eight, regardless of how many had served the required period. Legislation existed at the time permitting the creation of a Dental Reserve Corps, yet no steps had been taken to organize such a corps. Although officers of most branches of the military service customarily received special military, technical, and professional training immediately upon entrance into the Army, this opportunity had never been granted to members of the Dental Corps prior to the declaration of war. While many dentists were eager to enter the Dental Reserve Corps, the early plan pursued made it necessary for an applicant to forward his request to the Surgeon General's Office. The formal application was then furnished, and the applicant was advised when the next meeting of the examining board would be held in his own or an adjoining State, with the result that many days or weeks would elapse from the time when the original request was submitted by the applicant to the time when the completed papers arrived in the Surgeon General's Office for final decision. To prevent this delay, if possible, the chairman of the committee on enrollment and legislation of the Dental Committee, Council of National Defense, on May 28, 1917, submitted to the Surgeon General a plan whereby the chairman was permitted to select representative men of the dental profession who were well qualified, by education and experience, to give professional examinations to applicants desiring to be commissioned in the Dental Reserve Corps.[4] This method, although most unusual, was accepted by the Surgeon General. The men so selected and approved by the Surgeon General as preliminary dental examiners were the deans of recognized dental schools, the secretary of each State dental examining board, and such dentists, in addition, as the service demanded.

The dental service of the United States Army was the only arm of the military organization that was built up through the aid of preliminary examiners. All examiners gave liberally and gratuitously of their time to this end, and with such promptitude that, although but five Reserve Corps officers had been commissioned in the first two months of the war, by September 18, 1917, or three and one-half months later, all examinations were discontinued, inasmuch as the War Department had enough commissioned dental officers, actual or prospective, to meet the needs of an army of 5,000,000 men.

The War Department granted an increase of from one to two per thousand in the quota of dental officers.[5] The object of this was to provide between 9,000 and 10,000 dental officers for the prospective Army of 5,000,000 which the Nation was to have in the field by July 1, 1919. Efforts had been made to secure this increase ever since dentists had sought entrance into the United States Army, but without avail. This happy result was attained partly through the representations of the Preparedness League of American Dentists, partly through the efforts of the civilian dentists who had assisted in making the selective service men fit with respect to their teeth prior to induction into military service, but mainly because the need for more dental officers had been demonstrated.

The authorization for the assignment of two dental officers per thousand was secured on September 30, 1918,[6] and on October 3 authorization was granted to enlisted dentists in every camp in this country and abroad to complete application for commission.[7] A few days later, authorization was granted to those dentists who had been placed in Class I–A by their local boards to complete applications for commission in the Dental Corps.[8] Between October 3 and November 11, 1918, 1,500 applications were completed and forwarded to the Surgeon General's Office, and between 800 and 900 of these had been acted upon by the Surgeon General and recommended to the Adjutant General for commission.[9] Of these only about 100 were granted commissions. Because of the signing of the armistice, an increased number of dental officers was not needed, as there was a reserve of 1,500 still unassigned.

On November 11, 1918, from 86 dental officers on duty at the beginning of the war, we had attained, in round numbers, about 5,000, of whom 3,000 were in this country and a little less than 2,000 abroad,[10] At all camps and cantonments in this country two dentists per thousand were at work in specially constructed dental infirmaries, which accommodated from 20 to 30 dental equipments, composed of the usual base chair, fountain cuspidor, electrically heated spray outfit, complete laboratory equipment, a splendid radiographic outfit, and a dark room for developing films—a more complete equipment than was possessed by many prosperous civilian dental practitioners. The dental officers abroad had but few base equipments and, in the main, had to rely upon the field equipment, as the question of weight and space had to be considered in shipping equipment overseas.

For a comprehensive understanding of dental work accomplished by the date of the signing the armistice consideration may be given to: (1) Early courses in special instruction; (2) free dental service; (3) educational activities instituted for the purpose of making dental officers more efficient immediately upon entering service; (4) the inclusion of dental officers in the Subsection of Plastic and Oral Surgery of the Section of Surgery of the Head; (5) the beneficial influence resulting from the legal enactment that gave advanced rank to dental officers, and similar treatment of dental students by law, as previously allowed medical students by regulation as a result of an order issued by the Provost Marshal General.

In May and June, 1917, a majority of the dental schools of this country instituted gratuitous courses of special instruction for applicants desiring to enroll in the Dental Reserve Corps. The course was approved by the Surgeon General, and was of such a nature as to fit those in attendance to be better officers in field and hospital service. Between 4,000 and 5,000 dentists attended these courses without expense to themselves or to the Government.

On August 18, 1917, upon request of the Surgeon General, permission was sought from the Provost Marshal General to secure franking privileges for the Preparedness League of American Dentists, and his concurrence in a plan by which all men who had been accepted for general military service would be advised to appear before the members of that organization to have any urgently needed dental operations performed prior to their arrival in camp, without expense to themselves or the Government.[11] This work was considered imperative at the time for the reason that only one dentist was assigned per thousand of the total strength of the Army and also because manufacturers of dental supplies were unable to meet the excessive demands of the Army upon them in the early days of the war.

Following the Medical Department's approval, a Dental Reserve Corps officer was assigned to the Preparedness League headquarters in New York, and, in cooperation with the officers of that organization, obtained splendid results in organizing this service. The membership of this organization consisted of 1,700 civilian dentists. They furnished the material and performed about 1,000,000 gratuitous operations for men selected for the military service.[12] Through their activities three dental motor car ambulances were presented to the Government.[13]

On October 15, 1917, by authority of the Surgeon General, and under the direction of the Subsection of Plastic and Oral Surgery of the Section of Head Surgery, courses of instruction were instituted at Washington University Dental School, St. Louis; Northwestern University Dental School, Chicago; and the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania, Philadelphia, where medical and dental officers were detailed for instruction.[14] The medical officers were given special courses in plastic surgery, blood transfusion, and bone transplantation. The dental officers were given special instructions in bone fragment fixation by intraoral splints, the systemic effect of focal infections, and the surgical anatomy of the face, jaws, and neck. These courses were discontinued in March, 1918.

On March 15, 1918, in connection with the Medical Officers' Training Camp, a school for Army dental officers was instituted at Camp Greenleaf, Fort Oglethorpe, Ga., for military and professional instruction of dental officers and their authorized dental assistants.[15] When the armistice was signed, about 1,200 dentists were receiving either military or professional training in this school. The duration of the general course of instruction for the dental officer was two months. The first month was given over to 180 hours of general military training, the second to 70 hours of special military training, and 110 hours were devoted to professional subjects having a definite relation to general dental practice as it should be conducted in the Army. Each class consisted of from 80 to 100 members, and a small percentage was retained for training to qualify them for assignment as division dental surgeons. In this camp, dentists received training well suited to their physical and professional efficiency. During the war this was the only country giving such extensive special training in military and professional subjects to dental officers and their authorized enlisted assistants.

On July 9, 1917, the Surgeon General approved of the organization of the Division of Surgery of the Head, which, among other duties, was charged with the building up of a personnel specially qualified to care for diseases and injuries of the brain, eye, ear, nose and throat, face, and jaws.[16] The commissioned personnel of this division consisted of one specialist each in brain surgery, ophthalmology, and otolaryngology, one plastic or oral surgeon, and one dental oral surgeon competent to care for the fractures, impactions, and diseases to which the teeth and jaws are subject. It was believed that by including dentists in the organization of the Division of Head Surgery better service could be rendered to soldiers who had sustained injuries of the face and jaws than could possibly have resulted had these cases been handled without the assistance of dental officers. In addition, a splendid opportunity was given members of this profession to increase their ability and knowledge of the surgical principles involved in the management of these surgical lesions.

The act of October 6, 1917,[17] allotted to the Dental Corps the same grades and percentages in grades as was allowed by law for the Medical Corps of the Army. An amendment was attached to this bill which specified that "all regulations concerning the enlistment of medical students in the Enlisted Reserve Corps (q. v.) and their continuance in their college courses, while subject to call to active service, shall apply similarly to dental students."

Chart V shows the organizations of the work connected with the Dental Corps, while it still formed a section of the Division of Commissioned Personnel.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Logan, William H. G., Col., M. C., chief.
Laflamme, F. L. K., Col., D. C., chief.
Oliver, Robert T., Col., D. C., chief.

Bernheim, J. R., Col., D. C.
Ames, J. R., Lieut. Col., D. C.
Harper, J. P., Maj., D. C.
King, J. C., Maj., D. C.
Mitchell, L. G., Maj., D. C.
Richardson, Walter H., Maj., D. C.
Vignes, C. V., Maj., D. C.
Doyle, J. F., Capt., S. C.
Kennebeck, G. R., Capt., D. C.
Schaefer, J. E., Capt., D. C.
Vail, W. D., Capt., D. C.

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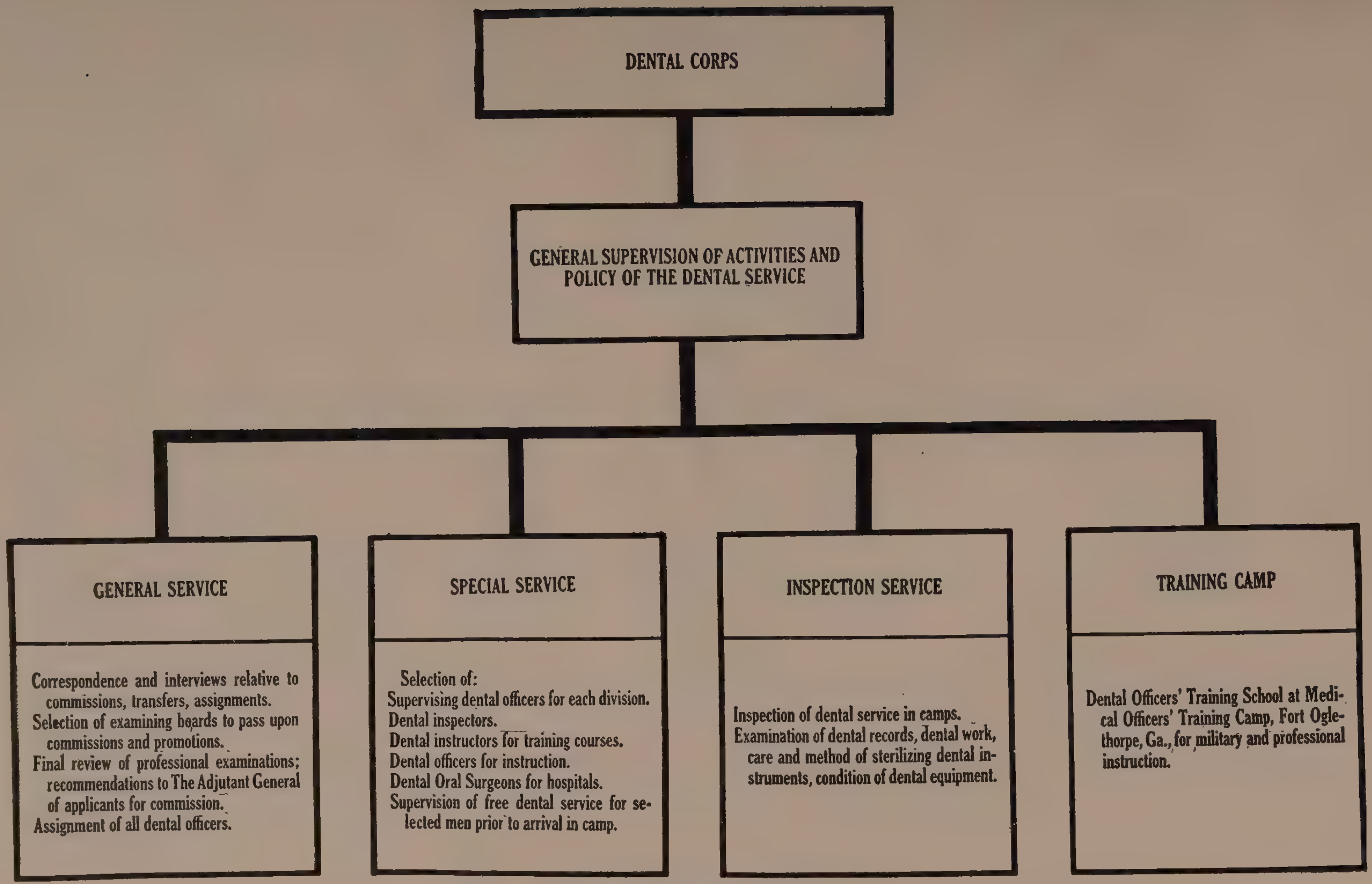
[a] In this list have been included the names of those who at one time or another were assigned to the division during the period April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.


DENTAL CORPS
GENERAL SUPERVISION OF ACTIVITIES AND POLICY OF THE DENTAL SERVICE
GENERAL SERVICE
SPECIAL SERVICE
INSPECTION SERVICE
TRAINING CAMP

GENERAL SERVICE

Correspondence and interviews relative to commissions, transfers, assignments.
Selection of examining boards to pass upon commissions and promotions.
Final review of professional examinations; recommendations to The Adjutant General of applicants for commission.
Assignment of all dental officers.

SPECIAL SERVICE

Selection of:
Supervising dental officers for each division.
Dental inspectors.
Dental instructors for training courses.
Dental officers for instruction.
Dental Oral Surgeons for hospitals.
Supervision of free dental service for selected men prior to arrival in camp.

INSPECTION SERVICE

Inspection of dental service in camps.
Examination of dental records, dental work, care and method of sterilizing dental instruments, condition of dental equipment.

TRAINING CAMP

Dental Officers' Training School at Medical Officers' Training Camp, Fort Oglethorpe, Ga., for military and professional instruction.

CHART V.—Dental Division, Surgeon General's Office, June, 1918.

REFERENCES.

(1) S. O., No. 184, par. 25, W. D., August 9, 1917.

(2) Office order, S. G. O., No. 1145, November 24, 1919.

(3) Service cards, United States Army, dental officers. On file, Commissioned Personnel Division, S. G. O.

(4) Report of the Committee on Dentistry, Council of National Defense. On file, Record Room, S. G. O., 156772 (Old Files).

(5) Correspondence. Subject: Dental Corps. Letter, Surgeon General to The Adjutant General, August 22, 1918; second indorsement, W. D., A. G. O., September 30, 1918. On file, Record Room, S. G. O., Mail and Record Division, A. G. O., 322.33.

(6) Second indorsement, W. D., A. G. O., to Surgeon General of the Army, September 30, 1918. On file, Record Room, S. G. O., 322.3 (Dental Corps).

(7) Second indorsement, W. D., S. G. O., to The Adjutant General, October 22, 1918. On file, Record Room, 211 (Dentists).

(8) Individual applications for commission in Dental Corps. On file, Record Room, S. G. O., 201 (Officer's name).

(9) Daily reports, October and November, 1918, Recommendations made by Commissioned Personnel Division to The Adjutant General. On file, Record Room, S. G. O., Weekly Report File.

(10) Statistical report, November 16, 1918. Commissioned Personnel Division. On file, Record Room, S. G. O., Weekly Report File.

(11) Correspondence. On file, Record Room, S. G. O., 154009 (Old Files).

(12) Correspondence. On file, Record Room, S. G. O., 703 (Dental Treatment).

(13) Annual Report of the Surgeon General, United States Army, 1918, 413.

(14) Ibid., 414.

(15) Reports of School for Training Officers of the Dental Corps. On file, Dental Division, S. G. O., 354.1 (Instruction, Dental Corps), Fort Oglethorpe (C).

(16) Résumé of Activities of the Division of Surgery of the Head. On file, Record Room, S. G. O., 024 (Division of Surgery of the Head).

(17) Bull., No. 61, W. D., Par. V, October 23, 1917.

CHAPTER V.

VETERINARY DIVISION.

At the outbreak of the war the Surgeon General was confronted with the problem of organizing and training a veterinary service adequate to cope with the tremendous responsibilities incident to the purchase, shipping, training, and shelter of a vast number of animals in the United States, their transportation overseas, and their utilization by the American Expeditionary Forces. The difficulties were markedly increased by reason of an absolute lack of provision of veterinary organization in this country. The Veterinary Corps of the Army, which had been established only during the preceding year (1916),[1] had not even completed its organization and yet it comprised the only small nucleus of veterinarians in the country possessing any military experience. Ignorance and inexperience of Army personnel, as a whole, in caring for animals was an important factor in reducing animal efficiency. These conditions were incident to our state of unpreparedness and had their foundation in matters of public policy, too far-reaching to be discussed here. Sufficient it is to say that the position in which the Veterinary Corps found itself at the outbreak of the war was a most conspicuous example of lack of preparation for war. It not only bore its own burden, but indirectly carried the burden of the Army, unfamiliar with animals and lacking a knowledge of the basic principles of their use and intelligent conservation.

From 1899 to 1916 the Army veterinary service was rendered by two types of veterinarians, i. e., those assigned to Cavalry and Field Artillery regiments and those employed under contract.[2] The act of Congress dated March 21, 1899, provided two veterinarians for each Cavalry regiment, one to have the pay and allowances of a second lieutenant of Cavalry and one to have $75 per month and the allowances of sergeant major. The senior was required to qualify in an examination as to professional, physical, and moral fitness. The act of February 2, 1901, abolished the second-class veterinarian and provided two veterinarians to a Cavalry regiment and one to a Field Artillery regiment with the pay and allowances of a second lieutenant mounted. The same act provided such number of veterinarians, at $100 per month, as the Secretary of War might authorize to be employed to attend animals of other departments not connected with the Cavalry or Field Artillery. While a limited number of veterinarians were employed by the Subsistence Department for the inspection of meats, specific authority therefor has not been discovered.

Under these provisions, no veterinarians in the Army enjoyed rank or promotion, although the act of March 3, 1911, authorized retirement for the veterinarians of the mounted service only. A veterinary service of this character lacked unification. In so far as the mounted service was concerned there was no organization higher than regimental. The contract veterinarians of

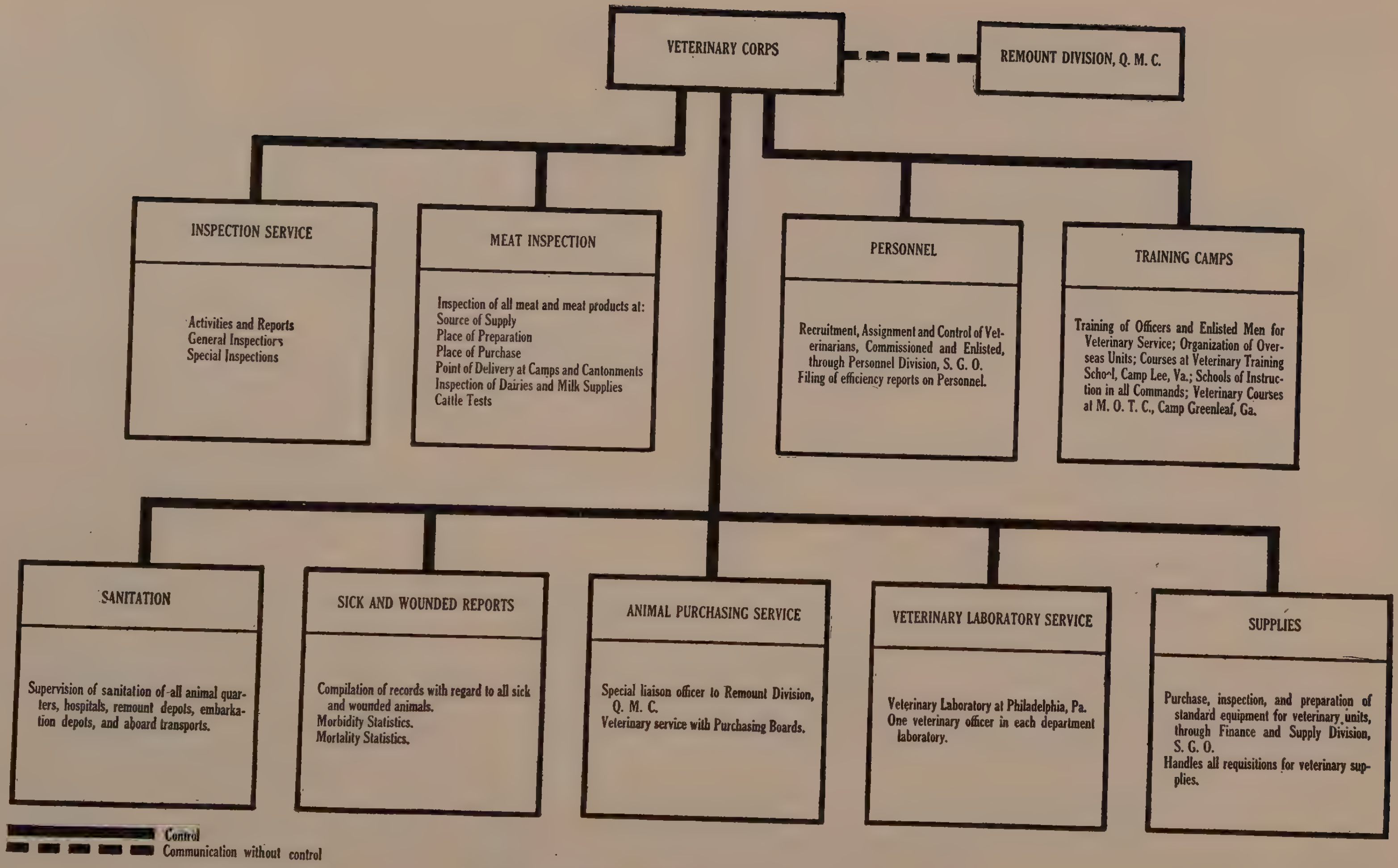

VETERINARY CORPS
REMOUNT DIVISION, Q. M. C.
INSPECTION SERVICE
Activities and Reports
General Inspectors
Special Inspections
MEAT INSPECTION
Inspection of all meat and meat products at:
Source of Supply
Place of Preparation
Place of Purchase
Point of Delivery at Camps and Cantonments
Inspection of Dairies and Milk Supplies
Cattle Tests
PERSONNEL
Recruitment, Assignment and Control of Veterinarians, Commissioned and Enlisted, through Personnel Division, S. G. O.
Filing of efficiency reports on Personnel.
TRAINING CAMPS
Training of Officers and Enlisted Men for Veterinary Service; Organization of Overseas Units; Courses at Veterinary Training School, Camp Lee, Va.; Schools of Instruction in all Commands; Veterinary Courses at M. O. T. C., Camp Greenleaf, Ga.
SANITATION
Supervision of sanitation of all animal quarters, hospitals, remount depots, embarkation depots, and aboard transports.
SICK AND WOUNDED REPORTS
Compilation of records with regard to all sick and wounded animals.
Morbidity Statistics.
Mortality Statistics.
ANIMAL PURCHASING SERVICE
Special liaison officer to Remount Division, Q. M. C.
Veterinary service with Purchasing Boards.
VETERINARY LABORATORY SERVICE
Veterinary Laboratory at Philadelphia, Pa.
One veterinary officer in each department laboratory.
SUPPLIES
Purchase, inspection, and preparation of standard equipment for veterinary units, through Finance and Supply Division, S. G. O.
Handles all requisitions for veterinary supplies.
Control
Communication without control

CHART VI.—Veterinary Division, Surgeon General's Office, June, 1918.

the Quartermaster Corps had no organization. Veterinary officers were supervised in their professional work by laymen rather than by men of their profession. Professional requirements were none too high and there existed neither opportunity nor inducement for individual improvement.[3]

The national defense act of June 3, 1916, created a commissioned Veterinary Corps, making it a part of the Medical Department. Members of this corps entered the Army as second lieutenants and assistant veterinarians; and were eligible to the rank, pay, and allowances of first lieutenant after five years; of captain after 15 years; and major after 20 years of service. They were assigned to mounted organizations, as inspectors of horses and mules, and as inspectors of meats, and constituted the Veterinary Corps. No enlisted personnel was provided. This legislation was the result of 32 years of effort to obtain a commissioned status for Army veterinarians.

Following the passage of the national defense act referred to, the building up of the Veterinary Corps was instituted by the Surgeon General. All veterinarians then in the service were given the first opportunity to take the entrance examination for the regular corps, after which invitations were extended to civilians to enter the junior grade. By April 11, 1917, 62 veterinarians had qualified and had been commissioned; by July 1, 1917, 91; and by July 1, 1918, 118,[3] which was the maximum strength of the corps authorized by the national defense act of 1916.

At the outbreak of the war the Surgeon General invited to Washington a veterinary advisory board, made up of leading civilian practitioners.[4] The members of this board served in his office, first as civilians, later under commissions in the Veterinary Corps, National Army. Under date of July 14, 1917, a proposed organization plan, prepared by the board, was submitted by the Surgeon General to The Adjutant General. This was returned by the Secretary of War on July 17 (4), with the statement that the Overman Act of May 18, 1917, gave the President full authority for expanding the Veterinary Corps and that no additional legislation was required. The plan contemplated 1 veterinary officer and 16 enlisted men for every 400 animals, the officers to be in grades corresponding with those of the Medical Corps. General Orders, No. 130, W. D., published October 4, 1917, established the Veterinary Corps, National Army, to comprise officers and enlisted men in the proportions which the Surgeon General had recommended, but no officers above the grade of major. Subsequently 2 colonels and 6 lieutenant colonels were authorized.[5]

The veterinary advisory board laid plans for the expansion of the corps and drew up an organization based on General Orders, No. 130, but following the British system. This plan developed into Special Regulations No. 70 for the government of the Army Veterinary Service, approved by the Secretary of War December 15, 1917. Changes amending many important features were published in July, 1918.[6] Other important work inaugurated at this time included Tables of Organization for veterinary units and veterinary supply tables.

The administrative work, connected with the expansion and functions of the Veterinary Corps, in the Surgeon General's Office, was successively in the charge of the veterinary advisory board and of individual veterinary or medical officers verbally assigned to that duty until June 21, 1918, when a medical officer was detailed as Director of the Veterinary Corps.[7] Eventually the administrative work was organized under this officer as the Veterinary Division of the Surgeon General's Office and has so continued.

At the outbreak of the war the 62 officers who had qualified prior to April 11, 1917, comprised the entire veterinary service.[3] The corps was augmented to its authorized strength of 118, as stated, but it became necessary to examine and commission reserve officers and assign them to active duty to provide professional service and to inspect animals being purchased and distributed to the remount depots then under construction at the Army cantonments. The deans of the leading veterinary schools were requested to hold professional examinations for men between 20 and 55 years of age; and from this group the candidates were examined physically by a medical officer. Those qualifying were commissioned as second lieutenants.[8] Under the provisions of General Orders, No. 130, W. D., 1917, veterinary reserve officers on active duty became a part of the Veterinary Corps, National Army, and were promoted therein. On September 30, 1917, examinations were suspended, 795 officers being at that time on active duty. There was a waiting list of about 500, which became exhausted in July, 1918. Examinations were then resumed through the operation of examining boards composed of experienced veterinary officers and convened at all the large stations. The work of these boards assured a reasonably close scrutiny of the qualifications of applicants and, until terminated by the end of the war, yielded a steady supply of officers.

All appointments in the Veterinary Reserve Corps were made in the grade of second lieutenant, as were those in the National Army, with the exception of 16 majors and one captain appointed directly from civil life into the latter. The exceptions were prominent civilians of mature age, selected for administrative duties.

Under the provisions of the act of June 3, 1916, a few veterinarians of National Guard organizations inducted into the Federal service were automatically transferred, without examination, as commissioned officers to the Veterinary Corps of the National Army.

Veterinary officers commissioned from the ranks came from two classes: Graduate veterinarians who enlisted prior to the establishment of the Medical Enlisted Reserve Corps and those who, as undergraduates, were enlisted in the Medical Enlisted Reserve Corps and were called to active duty on graduation. Graduate veterinarians in the ranks were authorized to take the examination for a commission on their own application, and from this source was derived a constant though small supply of officers having had the advantages of some military training.

The Medical Enlisted Reserve Corps, while it actually produced only a small number of officers for the Veterinary Corps, would have eventually become the chief source of supply. Based on section 55 of the act of June 3, 1916, it operated to permit the enlistment of veterinary students within the draft age and to allow them to remain on an inactive status until graduation when they were called to duty as required. Members of the Medical Enlisted Reserve Corps were first assigned to Camp Greenleaf (q.v.) for a course of training followed by examination for commissions. A relatively small number of officers resulted because the work was only well started when it was stopped by the signing of the armistice.

The maximum number of veterinary officers on active duty at one time reached 2,234 on November 30, 1918. The source of all those on active duty during the war was as folows:[9]

Regular Army	120
National Guard	74
Civil life (commissioned in Veterinary Officers' Reserve Corps)	1,596
Civil life (commissioned in Veterinary Corps, National Army)	17
Civil life (commissioned in Veterinary Corps, United States Army)	207
Enlisted forces (commissioned in Veterinary Officers' Reserve Corps)	185
Enlisted forces (commissioned in Veterinary Corps, United States Army)	110
Retired list	2
Contract veterinarians	2
Total	2,313

The allowance of one veterinary officer for every 400 animals (2.5 per 1,000) specified in General Orders, No. 130, W. D., 1917, at no time was sufficient for the requirements of the service. The ratio steadily mounted upward as the war progressed, and was 4.7 per 1,000 on November 30, 1918, being practically the same in France and the United States.

The fact that the vast majority of veterinary officers entered the Army in the junior grade made the question of promotion an important consideration from the first. The rule was adopted that promotion should be based on the record of the officer and the recommendation of his superiors.[10] So far as practicable, the written recommendation of a general veterinary inspector was made a prerequisite to each promotion. In December, 1917, all veterinary officers who had been recommended were given written examinations for promotion, and a waiting list established from which promotions were made as rapidly as vacancies became available. All promotions were passed upon by a board composed of the senior veterinary officers on duty in the Surgeon General's Office, after which they were subject to the approval of the Director of the Veterinary Corps. Difficulty was especially encountered in supplying senior officers for units proceeding overseas, and many such units departed in charge of juniors. It was felt that the authorities in the American Expeditionary Forces would be better qualified to make promotions with the advantage of a much longer period of observation. All vacancies in grade for overseas units were set aside as pertaining to the American Expeditionary Forces as soon as the units embarked and thereafter no such vacancies were filled in the United States. Promotions in the United States were suspended on November 11, 1918, and a large number of recommendations, which had been submitted by the Surgeon General, consequently failed to receive favorable consideration.[10]

The Comptroller of the Treasury on August 20, 1918, ruled that there was no authority in the national defense act for the appointment or promotion of a veterinarian to the grade of major.[11] On October 9, 1918, the same officer held that the President was without authority under the selective-service act to make temporary appointments in the grade of major, lieutenant colonel, and colonel for the reason that such grades were not considered to have been provided for in the national defense act of 1916.[10] On December 6, 1918, the Auditor for the War Department ruled that there was no authority for the promotion of a veterinary officer above the grade of second lieutenant until he had completed five years service, this decision likewise reverting to the provisions of the national defense act.

This series of decisions, by operating to demote practically every veterinary officer above the grade of second lieutenant, and to return many to a civilian status, threatened serious consequences to the veterinary organization. Many of the demoted officers were recommissioned at large in the United States Army and assigned to veterinary duties. The situation was presented by the Surgeon General to the War Department and resubmission of the entire question to the comptroller for reconsideration was urged. The Judge Advocate General and the Attorney General rendered opinions in the main favorable to the contention of the Surgeon General and eventually, on April 9, 1919, the comptroller practically reversed his former findings in a decision which restored the commissioned status of veterinary officers.

While long considered necessary by veterinarians, there is no evidence that the military authorities, until the outbreak of the war, had ever seriously contemplated the provision of an enlisted veterinary force. For many years the duties naturally devolving on such personnel were performed by men temporarily detailed from the line, an arrangement obviously unsatisfactory in many ways. General Orders, No. 130, W. D., 1917, was therefore revolutionary in that it authorized for the first time enlistments in the Veterinary Corps, in the several grades corresponding to those in the Medical Department. Enlisted men were obtained by voluntary enlistment, by special induction, ahead of their turn, of men within the draft age, by direct assignment of increments of the draft, and by transfer from other organizations. Authority was secured for the voluntary enlistment of specially qualified men and for the transfer to the Veterinary Corps of graduate veterinarians enlisted in other branches. The process of special induction made it possible to secure many recruits with special suitability for the veterinary service, such as veterinary and agricultural students, horsemen, ranchmen, farmers, and men with packing-house experience. Familiarity with animals is a basic qualification for the enlisted man of the veterinary service and neglect of this requirement in the assignment of recruits inevitably interfered with efficiency. Whenever a draft increment was requested, it was therefore necessary to specify the essential vocational qualifications. The Medical Enlisted Reserve Corps was the source of some excellent noncommissioned officer material.

Enlisted men were required for assignment to units proceeding overseas and for the service of camps, ports, and depots in the United States in the proportion of approximately two for the former purpose to one for the latter. The type of men sent to France was on the whole excellent; but in this country the veterinary service, in common with others, was compelled to make use of its share of limited service men, alien enemies, and conscientious objectors, practically all of whom were assigned to the hospital service at remount depots, where, if not of great efficiency, they proved to be of the least handicap. Until the end of the war, all enlisted were white with the exception of the personnel of Veterinary Hospitals Nos. 3, 4, 5, 22, and 23, Corps Mobile Veterinary Hospital No. 5, and Base Veterinary Hospital No. 3, a total of about 1,679 colored.

The total enlisted strength of the Veterinary Corps increased from zero on April 7, 1917, to more than 18,000 on October 31, 1918.[12] Reduction followed equally rapidly and, through the discharge of the selective-service men, threatened extinction of the enlisted part of the corps. Circular No. 141, War Department, 1919, granting authority for resuming enlistments in the Veterinary Corps, corrected this serious situation, and General Orders, No. 127, War Department, 1919, authorized an increase in the Medical Department of 1,500 men to be enlisted for the Veterinary Corps.

The training of veterinary officers and enlisted men in their military duties was conducted in the divisional units and the detachments at their stations and at several training schools. The instruction at stations was more or less continuous and was based on schedules furnished by the Surgeon General.[13] There was established at the Medical Officers' Training Camp, Fort Riley, a veterinary section devoted solely to the training of enlisted men in duties pertaining to the veterinary service and in such specialties as cooking and horseshoeing.[14] Immediately after graduation these men were assigned to organizations for overseas duty. This school operated from February 4, 1918, to September 30, 1918, when personnel and property were transferred to the Veterinary Training School at Camp Lee, Va. During this time 527 enlisted men were received, of whom 488 were eventually assigned to duty with troops.

The veterinary section of the Medical Officers' Training Camp at Camp Greenleaf was the principal training school for commissioned officers. It was opened in February, 1918, with a veterinary officer as commandant and a class of 50 student officers.[15] The first class was graduated on April 20, and by July, 1918, arrangements had been completed for graduating 100 officers each month after a two months' course of intensive training. Student officers were organized in separate companies with company officers detailed from their number and formed a separate veterinary battalion. Successive classes were made up of civilians newly commissioned, later reenforced by selected officers who had already been on duty at stations. From the graduates of the school suitable men were assigned to the Veterinary Training School at Camp Lee for incorporation in veterinary units being formed for overseas; others were returned to service at stations. In addition to its purely training function, this school rendered valuable service by reason of the facilities afforded the instructors for observing new officers, to recommend whether they should be discharged for disability or inefficiency, or promoted, and to determine the character of service for which they were best adapted. A total of 738 officers reported at the school, of whom 650 were ultimately sent to duty with troops. The last class reported November 15, 1918, and had received about one month's training when the school was closed.

An enlisted section was also maintained at this school, in which noncommissioned officers and specialists were trained. This section received all the veterinary graduates of the Medical Enlisted Reserve Corps called to active duty, including the graduates of 1918.[15] The latter received not only instruction in the basic duties of the soldier but also special training in their duties as future officers and, as rapidly as they were reported as qualified, were authorized to take the examination for commission. A total of 652 graduate veterinarians reported as enlisted men between July and November, 1918. Of this number

409 were given the opportunity to take the examination and 257 qualified. All further action terminated on November 11, 1918, and many soldiers who had qualified failed to receive their commissions and many others were excluded altogether from taking the examination.

The Veterinary Training School at Camp Lee, Va., was designed for organizing and training veterinary field hospital units for overseas service.[16] This school was a complete administrative and teaching plant with barracks for 1,600 men and quarters for 90 officers. A modern and complete veterinary hospital, with a capacity of 500 patients, was subsequently constructed as an integral part of this school. The first officers and students reported in June, 1918, and up to November 11, 1918, 8,200 men had been received, of whom nearly 6,500 went overseas in veterinary organizations. Personnel was usually secured by an increment from the draft sufficient to organize the units of one phase of the priority schedule. After a few weeks, sometimes days, of basic military training, the men were assigned to units and sent overseas. Classes in horseshoeing were maintained. The school was kept open several weeks after the signing of the armistice, until it had become clear that no further personnel would be needed.

A school for instructing veterinary officers in meat and forage inspection originated at the general supply depot at Chicago in 1917;[17] and, subsequently, enlisted men were received as students. The progressive development of the food-inspection function of the veterinary service and the excellent facilities available in Chicago for this type of instruction resulted in the permanent establishment of this school and its recognition as an essential factor in the technical training of veterinary officers and enlisted men.

A veterinary laboratory was established by War Department orders on January 19, 1918, at Philadelphia.[18] The laboratory rooms were provided by the University of Pennsylvania and the supplies were furnished by the Army Medical Department. In this laboratory the cause, prevention, and treatment of influenza, pneumonia, and strangles were investigated, sera and other specimens were examined, and mallein was made. Veterinary officers trained in laboratory work at this laboratory were placed in the department laboratories, where they were of great value in advancing the efficiency of the service. The personnel and equipment of this laboratory were subsequently transferred to the laboratory of the Army Medical School.

The national defense act placed the responsibility with the Veterinary Corps for meat inspection for the Army. Special Regulations No. 70 required that the Veterinary Corps provide for inspection of meat-producing animals before and after slaughter, of dairy herds supplying milk for the Army, of dressed carcasses, and authorized a meat inspector for the headquarters of each division. This service was an outgrowth of the embalmed-beef controversies of the Spanish-American War period, the outcome of which established the important principle that products for the Army should be inspected by a representative of the Army. This service had its actual origin at the general supply depot in Chicago, which was the central purchasing point during the war and where a small nucleus of veterinarians had been engaged on inspection duties for many years. It naturally expanded to other purchasing points at packing-house centers and, eventually, to the field. The inspection service at camps and stations developed more slowly and much of the personnel required special training in the veterinary school at Chicago before assignment to duty.[17] This branch of the veterinary service, as developed, included the inspection of meats and meat food and dairy products purchased for the Army at time of purchase, upon shipment, in storage, and at the time of issue. It included the inspection of the processes to which the food products were subjected, the sanitation of the establishments, storehouses, refrigerators, and cars in which they were handled, and, in addition, the inspection of milk herds and dairies. During the early months of the war this inspection was conducted, when at all, by various agencies. In a camp, the quartermaster applied for and secured the assignment of lay inspectors from the Bureau of Animal Industry for the inspection of meats at the local commissary. The dairy inspection was made by the camp sanitary officer, and the local butchers handling meat products were not, as a rule, subject to any inspection. Because of this unsatisfactory condition a conference was held in the Office of the Surgeon General on May 6, 1918, at which there were represented the Bureau of Animal Industry, the Public Health Service, and the Quartermaster Corps. As a result of this conference the Secretary of War directed that the meat and dairy inspection service be continued by the Veterinary Corps and that the Surgeon General issue the necessary regulations.[19] The lay inspectors of the Bureau of Animal Industry were gradually replaced by enlisted men of the Veterinary Corps, who were usually men possessed of packing-house experience.

Available veterinary hospitals at the outbreak of the war consisted of permanent structures which had been erected at some of the older posts having mounted troops. With the new construction incident to mobilization, a remount depot was built at each divisional cantonment.[20] Three of these depots had an official capacity of 10,000 animals, 8 of 7,500, and 23 of 5,000. It was their function to receive and condition newly purchased animals and turn them over to the divisions as required. The failure of many of the divisions to take their animals overseas resulted in an accumulation, and in some cases overcrowding, at the depots not originally contemplated, which had an important bearing on the work and efficiency of the veterinary service. When the depots were constructed, a number of stables were set aside for the sick, and designated as veterinary hospitals, but little was done toward providing accessory utilities essential to the operation of complete hospitals. These meager accommodations were often overcrowded with the sick, whose presence, in the midst of great numbers of sound animals normally inhabiting the depot rendered the handling of communicable diseases exceedingly unsatisfactory. Estimates and plans were eventually prepared by the Surgeon General for the establishment of camp hospitals outside the remount depot areas, but definitive action was stopped by the ending of the war. The foregoing conditions resulted in the veterinary hospitals at the camp remount depots being the site of the principal veterinary activities at the camps. Veterinary detachments of 12 officers and 150 enlisted men were maintained at the largest depots; 9 officers and 100 enlisted men for those of intermediate size, and 6 officers and 75 enlisted men for the smallest.[21]

In order to develop proper sanitary standards and to improve the efficiency of the veterinary personnel, the territory of the United States was divided into five zones, and in December, 1917, five experienced officers were assigned thereto as general veterinary inspectors.[22] These officers acted both as inspectors and instructors and remained at a station sufficiently long, not only to inspect, but to correct defects and improve the efficiency of the veterinary personnel by instruction. In the presence of an outbreak of communicable animal disease the inspector assumed veterinary charge of the situation until the disease had been brought under control. The work of these inspectors was of the utmost importance in improving the general efficiency of the veterinary service, and, in connection with the inspection of stockyards used in the shipment of public animals, it had a beneficial effect on the animal industry of the United States.

The application of the principles of veterinary preventive medicine in preserving the physical efficiency of the animals was closely involved with the conditions under which the animals lived at the remount depots where most of them were sheltered. The principal part of these depots was large corrals, holding in some cases several hundred animals. The corral fences ran up hill and down, inclosing woodland or swamp, as might be the case. It was impossible to clean the corrals and in many instances they became quagmires of manure. No shelter was available for the great majority of the animals and it was frequently necessary to overcrowd the corrals. In these cases it was practically impossible to maintain proper sanitation. Preventable conditions and communicable diseases caused extensive disability and losses, which decreased appreciably as the animals became seasoned, the overcrowding reduced, and the most objectionable corrals abandoned.

On December 19, 1917, a weekly telegraphic report was established for each station, giving the animal strength, the number of sick, and the number of animals having communicable diseases.[23] This procedure was of great importance in furnishing the Surgeon General with prompt and accurate information regarding sick animals. In July, 1918, a monthly sanitary report was required from every command in which there were animals.[6]

The direction of the Veterinary Corps being a function of the Surgeon General's Office, the veterinary service of the military departments was regarded as being under the supervision of the department surgeon. As rapidly as they became available, experienced veterinary officers were assigned as assistants of the department surgeons. In the field, however, the division veterinarian was not an assistant of the division surgeon, but was, as was the division surgeon, a member of the staff of the commanding general. Veterinarians of depots, posts, and other stations were likewise independent of the senior medical officer. As the divisions moved out of cantonments, the camp veterinary service was organized, consisting of the camp veterinarian, a meat and dairy inspector, and an enlisted detachment, with such additional personnel as the extent of the service demanded. The camp veterinarian, being on the staff of the camp commander, was his advisor in all veterinary matters. His duties were similar to those of the division veterinarian, and included responsibility for meat and dairy inspection.

Animal embarkation depots were constructed at the ports of embarkation of Newport News and Charleston, and large numbers of animals were assembled at these places and at Hoboken for transportation to Europe.[24] The scarcity of shipping interfered with shipments and it became necessary to retain the animals at the depots for many months. Large hospitals and an extensive veterinary service was developed at Newport News and at Charleston under the general control of the port veterinarian, who also supervised the veterinary service of the animal transports.[25]

The veterinary service on animal transports was provided by temporary transport veterinarians and casual officers detached from units proceeding overseas.[26] Finally these temporary details were changed to the permanent assignment of 1 veterinary officer and 25 enlisted men to each transport. The duties of the veterinary personnel on transports were to care for the sick, supervise the sanitation of the animals on the outward voyage, and to clean and disinfect the ship on its return. From October 15, 1917, to May 5, 1918, 28,473 animals were shipped from Newport News, with a total loss of 463, or 1.6 per cent, including 247 lost by storm on the *Hercules*.[26] During the period from August 11 to November 30, 1918, 18,764 were shipped with a loss of 49, or 0.26 per cent.[26] In October, 1918, animal shipments were abruptly begun at Hoboken, and by November 30, 1918, 18,834 animals had been shipped, among which there was a loss of 439, or 0.79 per cent.[26] In the grand total of 66,071 horses and mules shipped overseas, there were only 660 lost, or 1 per cent.[26]

Veterinary supplies were purchased and issued by the Finance and Supply Division of the Surgeon General's Office. Tentative supply tables were prepared and published as paragraphs 904, 966–977 of the Manual for the Medical Department, Changes No. 4, November 19, 1917.[27] It soon became evident that these tables were inadequate and, on the request of the Surgeon General, the British war office lent a complete set of veterinary field chests and wallets, which were used as models for those adopted for our service in the new supply tables compiled by the Surgeon General and approved by the Chief of Staff on January 22, 1918.[28]

The paramount duty of the Veterinary Division of the Surgeon General's Office from the beginning of the war was considered to be the organization of a veterinary field service for the American Expeditionary Forces. When General Pershing's headquarters sailed for France, in May 1917, neither personnel nor plans for a veterinary service went along for the very excellent reason that they were nonexistent. Veterinary officers were sent across in small numbers as requested, but the calls for them did not become urgent until large animal shipments began in October of that year.

It was first necessary to organize a veterinary service and prepare regulations for its guidance, and when this work was well advanced early in November, 1917, two well-qualified veterinary officers were sent to France for consultation in connection with organizing, equipping, and supplying the veterinary department of the expeditionary forces.[29] These officers carried an advance copy of Special Regulations No. 70, which was officially approved while they were in France.

While organization plans were being developed in the Surgeon General's Office, similar work was being done in the American Expeditionary Forces, and a memorandum was forwarded from General Pershing, dated September 18, 1917, describing the veterinary service as it was proposed to operate it.[30] On the requirements of this memorandum were based the Tables of Organization for veterinary units subsequently approved by the War Department. Issued on September 18, 1917, General Orders, No. 39, Headquarters, American Expeditionary Forces, attached the veterinary service to the remount service of the Quartermaster Corps, operating to detach it wholly from the Medical Department with the exception of supply of personnel and matériel.

This procedure was not contemplated by Special Regulations No. 70. In the face of this situation, the two veterinary officers above mentioned, after making such recommendations as they deemed appropriate for the betterment of the veterinary service, returned to the United States. Thereafter veterinary personnel was enrolled in the Medical Department, trained under Special Regulations No. 70, and on its arrival in France was diverted to the Quartermaster Corps and functioned under General Orders, No. 39, of the American Expeditionary Forces. An anomalous situation existed until July, 1918, when, on request from General Pershing,[31] a senior veterinary officer was sent to France as chief veterinarian and the veterinary service of the American Expeditionary Forces was reorganized in the manner prescribed by Special Regulations No. 70.

Tables of Organization for the veterinary service were promulgated about January 1, 1918.[32] The service with regiments of cavalry, field artillery, and other units, both divisional and otherwise, having animals was provided by the attachment of one or more veterinary field units composed of one officer and three enlisted men. For each infantry division, an evacuation unit was authorized, known as the Mobile Veterinary Section and consisting of one officer and 21 enlisted men. Each division was allowed a division veterinarian and a division meat inspector and had a total veterinary personnel of 12 commissioned officers and 51 enlisted men. With the exception of the 1st, 2d, 26th, 42d, 41st, and 32d Divisions, the veterinary divisional personnel was organized, trained, and equipped at the divisional camps and proceeded overseas with the unit to which attached. The six divisions above mentioned, and in the order given, departed with practically no veterinary personnel, and the Mobile Veterinary Sections were subsequently formed and sent to France as a part of the first phase. The table below shows each division, the official number of the Mobile Veterinary Section as authorized by General Orders, No. 8, War Department, 1918, and the name of the camp at which the latter was organized:[33]

Division No.	M. V. S. No.	Camp.	Division No.	M. V. S. No.	Camp.	Division No.	M. V. S. No.	Camp.
1	1	Devens.	20	20	Sevier.	77	302	Upton.
2	2	Do.	26	101	Devens.	78	303	Dix.
3	3	Greene.	27	105	Wadsworth.	79	304	Meade.
4	4	Do.	28	106	Hancock.	80	305	Lee.
5	5	Merritt.	29	107	McClellan.	81	306	Jackson.
6	6	Wadsworth.	30	108	Sevier	82	307	Gordon.
7	7	McArthur.	31	109	Wheeler.	83	308	Sherman.
8	8	Fremont.	32	104	Fort Clark.	84	309	Taylor.
9	9	Sheridan.	33	110	McArthur.	85	310	Custer.
10	10	Funston.	34	111	Logan.	86	311	Grant.
11	11	Meade.	35	112	Cody.	87	312	Pike.
12	12	Devens.	36	113	Bowie.	88	313	Dodge.
13	13	Lewis.	37	114	Sheridan.	89	314	Funston.
14	14	Custer.	38	115	Shelby.	90	315	Travis.
15	15	Logan.	39	116	Beauregard.	91	316	Lewis.
16	16	Kearney.	40	117	Kearney.	92	317	Funston.
17	17	Beauregard.	41	103	Upton.	95	320	Sherman.
18	18	Travis.	42	102	Do.	96	321	Wadsworth.
19	19	Dodge.	76	301	Devens.	97	322	Cody.

The authorized veterinary hospital units for field service were: Corps mobile veterinary hospital (evacuation), with two officers and 35 enlisted men; Army mobile veterinary hospital (evacuation), with four officers and 144 enlisted men, and designed for 500 patients with half the equipment of a veterinary hospital; base veterinary hospital (stationary) identical as to personnel and equipment with the preceding; and veterinary hospital (stationary) with eight officers and 311 enlisted men. The latter was the typical hospital for the service of the rear, with a standard capacity of 1,000 patients.[32]

Veterinary hospital units of the foregoing types were called for by General Pershing's schedule of September 18, 1917,[30] to be shipped in the successive phases of the shipping project in the following numbers:

Corps mobile veterinary hospitals	5
Army mobile veterinary hospitals	1
Veterinary hospitals	26
Base veterinary hospitals	2

Replacements, 50 officers and 795 enlisted.

For phases subsequent to the fifth, the Surgeon General was directed to organize the following additional units:[34]

Corps mobile veterinary hospitals	8
Army mobile veterinary hospitals	1
Veterinary hospitals	4
Base veterinary hospitals	1

Replacements, 40 officers and 790 enlisted.

The units of the first phase were organized at Camps Devens, Upton, and Lee from miscellaneous enlisted men who had been assigned to the Veterinary Corps.[34] Thereafter all units were organized at the Veterinary Training School, Camp Lee, in the order called for by the priority schedules. The following units were sent overseas:[35]

Phase I.

Veterinary Hospitals Nos. 1 to 6, inclusive.
Corps Mobile Veterinary Hospital No. 1.
Base Veterinary Hospital No. 1.

Phase II.

Veterinary Hospitals Nos. 7 to 11, inclusive.
Corps Mobile Veterinary Hospital No. 2.
Army Mobile Veterinary Hospital (½) No. 1.

Phase III.

Veterinary Hospitals Nos. 12 to 16, inclusive.
Base Veterinary Hospital No. 2.
Corps Mobile Veterinary Hospital No. 3.

Phase IV.

Veterinary Hospital Nos. 17 to 21, inclusive.
Army Mobile Veterinary Hospital (½) No. 2.
Corps Mobile Veterinary Hospital No. 4.
Four replacement units, aggregating 50 officers and 795 enlisted.

Phase V.

Veterinary Hospital No. 25.

October Phase.

Corps Mobile Veterinary Hospitals Nos. 7, 8, 9.

Veterinary Hospitals Nos. 22, 23, 24, Corps Mobile Veterinary Hospital No. 5, Base Veterinary Hospital No. 3, and Replacement Unit No. 5, which comprised 40 officers and 210 enlisted, were organized but did not embark, and the termination of the war removed any need for the remaining units which had been authorized.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Miller, Reuben D., Col., M. C., chief.
Morse, Charles F., Col., M. C., chief.
Griffin, Gerald E., Lieut. Col., V. C., chief.
Marshall, Clarence J., Lieut. Col., V. C., chief.

White, D. S., Col., V. C.
Bemis, Harold E., Lieut. Col., V. C.
Stanclift, R. J., Lieut. Col., V. C.
Blair, W. R., Maj., V. C.
Cotton, Charles E., Maj., V. C.
Derrick, Jesse D., Maj., V. C.
Fish, P. A., Maj., V. C.
Foster, R. J., Maj., V. C.
Hanvey, George A., Maj., V. C.
Hill, W. P., Maj., V. C.
Hornbaker, J. N., Maj., V. C.
Jewell, Charles H., Maj., V. C.
Klein, L. A., Maj., V. C.
Lange, Aug. F., Maj., V. C.
Lininger, Daniel B., Maj., V. C.
McKillip, George B., Maj., V. C.
Mason, Alfred L., Maj., V. C.
Powell, George R., Maj., V. C.
Staley, Raymond M., Maj., V. C.
Stokes, W. J., Maj., V. C.
Towner, A. N., Maj., V. C.
Turner, John P., Maj., V. C.
Ward, S. H., Maj., V. C.
Clarke, Harold, Capt., V. C.
Curley, E. M., Capt., V. C.
Eakins, H. S., Capt., V. C.
Moone, J. G., Capt., V. C.
O'Connell, E. P., Capt., V. C.
Carey, Edward F., Second Lieut., V. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917 to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

VETERINARY ADVISORY BOARD

Bennett, S. E., Dr.
Cotton, Charles E., Dr.
Howard, L. H., Dr.
Langie, A. F., Dr.
Mohler, J. R., Dr.
Moore, V. A., Dr.
Ward, S. H., Dr.

REFERENCES.

(1) Bull. No. 16, W. D., June 22, 1916.
(2) A. R. 88 and 89, 1913.
(3) Annual Report of the Surgeon General, United States Army, 1918, 415.
(4) Correspondence. Subject: Veterinary Advisory Board. On file, Record Room, S. G. O., 198610 and 190950 (Old Files).
(5) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1203.
(6) Special Regulations No. 70, Changes No. 1, July 5, 1918.
(7) Letter from Col. Charles F. Morse, M. C., to Col. Charles Lynch, M. C., editor-in-chief, The Medical Department of the United States in the World War, November 10, 1921. Subject: History Veterinary Corps. On file, Historical Division, S. G. O.
(8) Correspondence. Subject: Veterinary Examining Boards. On file, Record Room, S. G. O., 157275 (Old Files). Correspondence. Subject: Examination of Veterinarians for Appointment. On file, Record Room, S. G. O., 157595 (Old Files). Correspondence. Subject: Veterinary Colleges. On file, Record Room, S. G. O., 161034 (Old Files).
(9) Compiled from personal cards on file in Veterinary Division, S. G. O.
(10) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1202.
(11) Twenty-five decisions of the Comptroller of the Treasury, April 9, 1919, 751 (Veterinarians, Army). Correspondence. Subject: Commissioning Veterinary Officers. On file, Record Room, S. G. O., 210.1–1 (Veterinarians), and 322.055–1 (Veterinary Corps).
(12) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1200.
(13) Schedule of Instruction. On file, Record Room, S. G. O., 353.1 (Aug. 26, 1918).
(14) Correspondence. Subject: Veterinary Training. On file, Record Room, S. G. O., 352.4 and 353 (Fort Riley) (C).
(15) Correspondence. Subject: Veterinary Training School at Camp Greenleaf. On file, Record Room, S. G. O., 352.4 and 353 (Camp Greenleaf) (C).
(16) Correspondence. Subject: Veterinary Training. On file, Record Room, S. G. O., 352.4 and 353 (Camp Lee) (D); and 319.1 (Veterinary Training School, Camp Lee) (D).
(17) Correspondence. Subject: Veterinarians as Inspectors of Meat—Chicago. On file, Record Room, S. G. O., 199171 (Old Files). Historical Report of Chicago Depot. On file, Record Room, S. G. O., 314.7–2.
(18) Special Orders, No. 9, W. D., January 11, 1918. Circular No. 121, Veterinary Division, S. G. O., May 3, 1918.
(19) Circular No. 34, Veterinary Division, S. G. O., March 22, 1919.
(20) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1204.
(21) Letter from the Surgeon General to The Adjutant General, May 3, 1918. Subject: Veterinary Service at Posts, Camps, etc. On file, Record Room, S. G. O., 322.3 (Veterinary Corps).
(22) Memo. for the Inspector General from the Surgeon General, December 10, 1917. Subject: Losses of Animals by Death and Sick Rates from Infectious Diseases; letter from The Adjutant General to the Surgeon General, December 15, 1917. On file, Veterinary Division, S. G. O., 322.055–1 (Veterinary Corps). (Marked Appendix L and L–2, respectively.)
(23) Weekly reports of animals. On file, Record Room, S. G. O., 728 (Veterinary Sanitation, Hippology); and 484.3 (Veterinary Service, General).
(24) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1205.
(25) Statements of personnel required by the Veterinary Corps, Medical Department, Table A, authorized May 23, 1918. On file, Adjutant General's Office, 322.34 (Miscellaneous Division).

(26) Statistical tables, transport reports. On file, Veterinary Division, S. G. O.; routine reports on change of animals, Form 101. On file, Veterinary Division, S. G. O.

(27) Manual for the Medical Department, 1916. Changes No. 4, November 19, 1917, pars. 902, 966–977.

(28) First indorsement from The Adjutant General to the Surgeon General, January 22, 1918. On file, Finance and Supply Division, S. G. O., 742.

(29) Reports of Majors Klein and Mason. On file, Record Room, S. G. O., 484.3 A. E. F.

(30) Memo. of project for the service of the rear. On file, Record Room, S. G. O., 322.055–1 (A. E. F., France) Y.

(31) Cablegram No. 1410 from General Headquarters, A. E. F., July 3, 1918. On file, Cable Record, S. G. O.

(32) Tables of Organization, Nos. 43, 109, 330, and 331.

(33) Mobile veterinary units. On file, Record Room, S. G. O., 322.3–32 (Veterinary Units, A. E. F.) (V); 322.3–32. (Veterinary Units, Camp Lee) (D).

(34) Letters from The Adjutant General to the Surgeon General. On file in cable record, S. G. O.: Letter of January 10, 1918; letter of September 10, 1918 (A. G. O. 370.5 EE) (Misc. Div.); letter of October 24, 1918 (A. G. O. 370.5 EE) (Misc. Div.).

CHAPTER VI.

DIVISION OF MEDICAL DEPARTMENT TRAINING.

(MEDICAL OFFICERS' TRAINING CAMPS.)

For many years before the World War an elaborate system for the education and training of Medical Department personnel had been in operation.[1] Quite naturally, this had functioned mainly in the Regular Army, but it had been extended also to the National Guard as well as to a few Medical Reserve officers. A much nearer approximation to the war system was afforded by the Mexican border mobilization of 1916–17. Here military field instruction appropriate to Medical Department personnel was generally given to Regular Army and National Guard and to both their officers and enlisted men. This plan of Medical Department training was approved by the commanding general, Southern Department, on August 4, 1916.[2] The scheme followed here was later used as the basis for the World War plan of instruction, which was administered in the main by instructors familiar with it from practical experience on the Mexican border.

Before we entered the World War the Personnel Division of the Surgeon General's Office was in charge of education and training, as well as all other matters relating to personnel, and no special training division existed. But no delay occurred when war came. In fact, on the day that war with Germany was declared the Surgeon General had put in his possession a letter from the medical officer later in charge of Medical Department training, urging the immediate necessity of instituting training for Medical Department personnel, with an outline plan.[3] A more comprehensive plan for practical execution of the project was then prepared, after conference with the Bureau of Militia Affairs, which had just had a valuable experience in a similar line by the preparation of a short course of armory training for the Medical Department of the National Guard. In the final statement of the plan was outlined a thoroughgoing course for student officers at training camps, with the centric idea of inculcating in the shortest possible time the basic military duties of medical officers through intensive training, and this especially for duty with troops in war. From the officers thus trained it was expected to develop, in addition, instructors for both officers and men of the Medical Department who naturally would be required in very large numbers.

The Surgeon General, in forwarding the final plan to The Adjutant General, on April 21, 1917, made the following remarks: [4]

> 1. The attached scheme affords a plan for starting, without delay, the necessary training of the officers and men of the Medical Department. It can be modified later as experience may warrant. It proposes to carry out an intensive training of both officers and enlisted men, both in special training camps and in addition to necessary service with troops. For the former class the course covers three months; for the latter, six months.

2. The nature and scope of the proposed course, sample of daily routine, list of textbooks, etc., are given therein.

3. For the above instruction purposes it is believed that four medical training camps should be established. The Medical Department, among other cogent reasons, can not furnish instructors or equipment for more than this number. They should be established in conjunction with the general officers' training camps at Fort Oglethorpe, Fort Riley, Leon Springs, and Fort Benjamin Harrison, and later, if found desirable, one on the Pacific coast; but if a suitable camp and maneuver ground can be found on the Atlantic seaboard south of New York, this should be substituted for Fort Benjamin Harrison.

4. If approved, I recommend that the necessary facilities for shelter, messing, supply, etc., be provided without delay for the use of these training camps at the above points.

5. Authority is also requested for the bringing to these training camps of a training staff of approximately 1 officer instructor to each 50 student officers, together with such enlisted personnel as may be necessary.

6. I also request that one ambulance company and one field hospital be sent to each of these training camps, and that three additional ambulance companies and three additional field hospitals be organized at each without delay. Also that each training camp be further provided with an enlisted force equivalent to six regimental sanitary detachments. The above personnel is necessary to visualize medical organizations, equipment, and fieldwork, and to serve as a service corps in looking after the training camp and the many hundreds of student officers to be in attendance.

7. Authority is further requested for the establishment of a training course with sanitary personnel with troops, the appointment of officers as training officers with divisions or separate camps, and the establishment of a system of inspection sufficient to insure the efficiency of same.

8. It is requested that this matter be given decision as soon as possible. It is understood that the general training camps are to begin operations on May 15. The Medical Department should begin its work at least by that time, and, if possible, one or more of its camps should be put into operation before that time.

9. Attention is invited to the fact that the work of the Medical Department actively begins the moment troops are raised or brought together, and that the equipment of these training camps, the detailed organizations of the training course, and the provision of the staff of instructors should therefore be made as soon as possible.

The plan was approved and acted on by the War Department, as follows:[4]

[1st ind.]

War Dept., A. G. O., May 11, 1917.

To: The Surgeon General, with the information that the establishment of additional subdivisions of the work in the office of the Surgeon General, as referred to herein, is approved with the following exceptions:

That no increase in the Medical Corps in number or grades shall accrue therefrom;

That the chief of the Sanitary Section may consult with and make recommendations to the Quartermaster General in regard to construction of a sanitary character, and may also recommend sanitary orders, but all orders will be issued in the way now prescribed by regulations; and

That four medical training camps, to begin June 1, 1917, with an attendance of officers for training at each to be not over 600, are approved; and that the tentative scheme of instruction is approved and will be submitted in form to be published as a general order.

On receipt of this approval the Division of Medical Department Training was at once established in the Surgeon General's Office.[5]

On the same day, May 11, 1917, the War Department instructed the Quartermaster General to provide cantonments with accomodations for 600 officers at each of the four medical training camps.[6] Cantonments for four ambulance companies and four field hospital companies were also ordered constructed at each of these stations, and each camp was to be ready for occupancy by June 1, 1917.[6]

The camp at Leon Springs was never established, as it was found impossible to provide instructors for more than three camps.[7] A little later War

Department authority was received to raise the quota of student officers at each of the three camps actually established from 600 to 1,000; [7] thus there was a net increase of 600 in the total number of students. To each of these camps a teaching staff of selected regular medical officers, each a recognized expert in his own particular line, was assigned. These staffs varied in numbers from 10 to 12 officers and were increased as soon as student officers could be taught so as to serve as additional instructors. The work of instruction was started as soon as the camps opened. As the first need for trained medical personnel would obviously be for the divisions shortly to be organized, a course of instruction was worked out to meet their needs, and as these were to be combat divisions, this course was specially adapted for the zone of operations.[8] This was designated as the basic course and continued to be so through the whole period of instruction. It was prescribed in a letter of instruction from the Division on Medical Department Training and was found so satisfactory that there was no reason to change it. Early it was supplemented to a moderate extent by instruction for the lines of communication, for different kinds of hospitals, and by a limited amount of professional work relating mainly to military surgery and war psychoses.

In the early part of the war, under the various professional divisions of the Surgeon General's Office as was appropriate in each case, and not under the training division, special professional courses for medical officers were very generally given at medical centers, but a little later it was concluded in the training division that such courses could be given to greater military advantage at the training camps. By the time the change had been approved by the different professional divisions in the Surgeon General's Office that were concerned, the training camp at Fort Benjamin Harrison, Ind., had been abandoned, leaving only two Medical Officers' Training Camps still in operation, the one at Fort Riley, Kans., and the other at Camp Greenleaf, Fort Oglethorpe, Ga.

Professional instruction was started at the camps in a small way by the establishment of schools of roentgenology, orthopedics, and internal medicine. The effort was made to select as students for these schools medical officers who were specially qualified for the particular line of work. Some of these had been reserved for special work by professional divisions of the Surgeon General's Office, but this was not the case with all who were selected.

From these small beginnings was finally developed at Camp Greenleaf, after Fort Riley was closed, a postgraduate school of wide scope. In it were found special schools on military surgery, internal medicine, anatomy, roentgenology, laboratory technique, neuro-surgery, otolaryngology, ophthalmology, applied hygiene and sanitation, and epidemiology.[a] [9]

The three camps opened on June 1, 1917, which was the date originally set for student officers to report, although an effort was made later to have their orders amended so as to have them report on June 15. This attempt at delay failed through clerical error in the War Department, and considerable numbers of student medical officers arrived at the camps on June 1 and immediately thereafter. This, though regretted at the time, proved to be fortunate, as it gave an extra fortnight of much-needed training to many students.

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[a] See histories of divisions covering the subjects named.

What this training meant may be inferred from the fact that notwithstanding the general state of unpreparedness when the student officers reported on June 1, on August 27, 1917, one week before drafted men were to arrive at National Army divisional encampments, there left from each medical training camp five trains of medical officers and enlisted men of the Medical Department.[10] Each train carried medical personnel to its own camp. The camp quota was about 60 medical officers and 310 enlisted men, who were not only suitably organized for the formations with which they were to serve, but for each detachment officers and men had been specially selected at the training camps for fitness in the duties which they were intended to perform.[10] These 900 medical officers and 4,600 enlisted men went to the 15 divisions that were ready for them, and were able to provide for themselves, to attend to sanitary matters, and to arrange for the handling of recruits in great numbers in advance of the arrival of the latter. By this means, very largely, the Medical Department met the strain imposed upon it at the start.

The Medical Department personnel sent to camps for training was never sufficient in numbers, in respect to officers or enlisted men, which was demonstrated by the continued necessity of ordering them away before their training was completed.[11] Instances occurred in which enlisted men were ordered elsewhere as soon as they were equipped and of medical officers who could be held for training but two or three weeks. While through the training camps it was hoped to create a fully trained reserve of officers and men, this never proved possible, as the demand was always too great to meet the needs of the Medical Department in caring for sick and wounded. So far as enlisted men were concerned there was always a shortage of one-fourth to one-third of the total number which should have been enrolled in the service to comply with existing standards of organization. This shortage in the gross enrollment seriously interfered with their training in the camps, as not enough could be sent and those who actually arrived could not be retained long enough to complete the course of instruction.[11] The number of medical officers sent to the camps proved sufficient in numbers to meet drafts for personnel made on them, but not sufficient to insure that officers so drafted would be adequately trained.[11] In this connection the recommendation was made that on account of the needs of the Medical Department 3,000 medical officers, 500 officers of the Dental Corps, Veterinary Corps, and Sanitary Corps, and 35,000 enlisted men, Medical Department, as a minimum, be kept constantly under training.[11] Such large numbers as this, however, never were attained during the war.

With the armistice, the need for special war training disappeared, and, having wound up its business, the Division of Medical Department Training in the Surgeon General's Office was discontinued on November 11, 1918.[12]

PERSONNEL.[b]

(April, 1917, to December, 1919.)

Bradley, Alfred E., Brig. Gen., M. D., chief.
Munson, Edward L., Brig. Gen., M. D., chief.
Ashburn, Percy M., Col., M. C., chief.
Morris, S. J., Col., M. C., chief.

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[b] In this list have been included the names of those who at one time or another were assigned to the division during the period April 6, 1917, to December 31, 1919. The names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

REFERENCES.

(1) Manual for the Medical Department, 1916, Art. II, 56.

(2) Memo. of Instructions for Medical Officers and Sanitary Units, Headquarters, Southern Department, Fort Sam Houston, Tex., August 12, 1916. On file, Record Room, S. G. O., 167580 (Old Files).

(3) Annual Report of the Surgeon General, United States Army, 1918, 405.

(4) Ibid., 405 and 406.

(5) Memo. from Col. E. L. Munson, M. D., to Lieut. Col. F. W. Weed, M. C., April 24, 1922. Subject: Office Orders Establishing a Training Division in the Surgeon General's Office. On file, Historical Division, S. G. O.

(6) First indorsement, A. G. O., to Quartermaster General, May 11, 1917. Subject: Medical Training Corps. On file, Mail and Record Division, A. G. O., 2581692 (Old Files).

(7) Annual Report of the Surgeon General, United States Army, 1918, 406.

(8) Letter from the Surgeon General to all division surgeons, October 3, 1917. Subject: Training of Sanitary Personnel of Divisions. Copy on file, Historical Division, S. G. O.

(9) History of the Medical Officers' Training Camp, Camp Greenleaf, Ga. On file, Historical Division, S. G. O.

(10) Annual Report of the Surgeon General, United States Army, 1918, 407.

(11) Ibid., 409, 410.

(12) Office Order, No. 97, S. G. O., November 30, 1918.

CHAPTER VII.

FINANCE AND SUPPLY DIVISION.

PRE-WAR ORGANIZATION OF DIVISION.

A Supply Division was one of the old divisions of the Surgeon General's Office.[1] As its name implies, this division was concerned with supply; the finances of the Medical Department, however, likewise were in its charge. This supply organization, as will be seen, was not exactly the same as that which existed during the greater part of the World War.

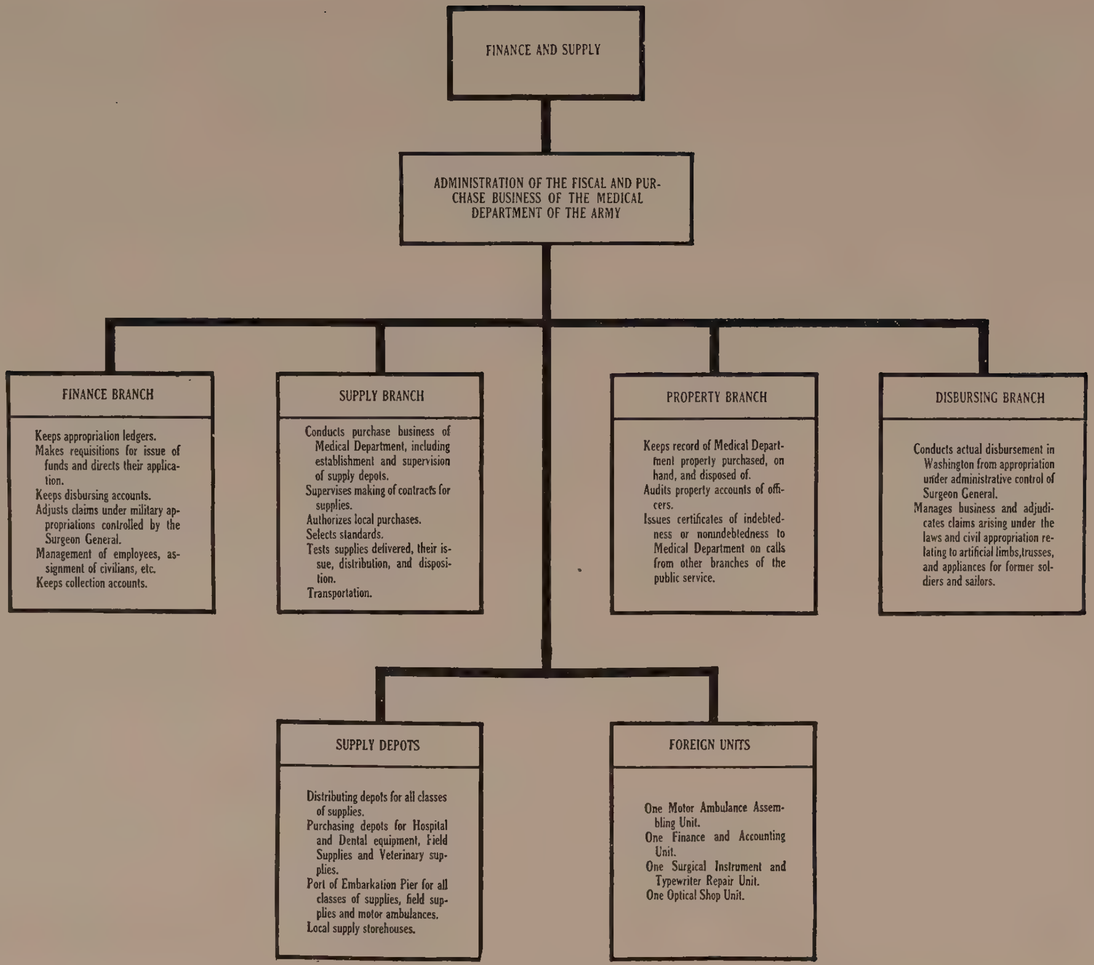
Formerly, a supply officer, under the Surgeon General and stationed in his office, had direct charge of medical supplies and disbursements, while the administrative audit of vouchers and the examination of property returns were carried out in sections of the Record, Correspondence and Examining Division, which subsequently became the Administrative Division (q. v.)[2] These sections, while not a part of the Supply Division, were supervised, in large measure, by the supply officer, who, for the proper conduct of his own division, was compelled to keep informed on what was being done in these directions.

The organization of the supply service in the Surgeon General's Office, then, when we entered the World War was as follows:

It was centralized under one officer, who was also a disbursing officer and who had general charge of the administrative examination of accounts. There was a Supply Section (in the Supply Division) which handled all matters pertaining to requisitions;[1] a Property Return Examination Section (in the Record, Correspondence and Examining Division), where the disbursing accounts of the several officers concerned were examined and, when correct, transmitted to the accounting officers of the Treasury for settlement;[2] and a Finance Section (in the Supply Division), where vouchers for supplies obtained and for services performed (for the most part laundry) at places other than supply depots were scrutinized and corrected, if need be, and either paid by the disbursing officer of the Surgeon General's Office or sent for payment to a disbursing officer at an adjacent supply depot,[2]

WAR CHANGES IN ORGANIZATION OF DIVISION.

On September 20, 1917, the Property Return and the Audit Sections of the Record, Correspondence and Examining Division, and the Supply and Finance Sections of the Supply Division were consolidated into a single, organization known as the Finance and Supply Division.[2] Thereafter, throughout the war period, all supply and finance matters were handled within this new division. (See Chart VII.)



FINANCE AND SUPPLY

ADMINISTRATION OF THE FISCAL AND PURCHASE BUSINESS OF THE MEDICAL DEPARTMENT OF THE ARMY

FINANCE BRANCH

Keeps appropriation ledgers.
Makes requisitions for issue of funds and directs their application.
Keeps disbursing accounts.
Adjusts claims under military appropriations controlled by the Surgeon General.
Management of employees, assignment of civilians, etc.
Keeps collection accounts.

SUPPLY BRANCH

Conducts purchase business of Medical Department, including establishment and supervision of supply depots.
Supervises making of contracts for supplies.
Authorizes local purchases.
Selects standards.
Tests supplies delivered, their issue, distribution, and disposition.
Transportation.

PROPERTY BRANCH

Keeps record of Medical Department property purchased, on hand, and disposed of.
Audits property accounts of officers.
Issues certificates of indebtedness or nonindebtedness to Medical Department on calls from other branches of the public service.

DISBURSING BRANCH

Conducts actual disbursement in Washington from appropriation under administrative control of Surgeon General.
Manages business and adjudicates claims arising under the laws and civil appropriation relating to artificial limbs, trusses, and appliances for former soldiers and sailors.

SUPPLY DEPOTS

Distributing depots for all classes of supplies.
Purchasing depots for Hospital and Dental equipment, Field Supplies and Veterinary supplies.
Port of Embarkation Pier for all classes of supplies, field supplies and motor ambulances.
Local supply storehouses.

FOREIGN UNITS

One Motor Ambulance Assembling Unit.
One Finance and Accounting Unit.
One Surgical Instrument and Typewriter Repair Unit.
One Optical Shop Unit.

CHART VII.—Division of Finance and Supply, Surgeon General's Office, June, 1918.

PRE-WAR DEVELOPMENT OF SUPPLY SYSTEM.

At the outbreak of the Spanish-American War the Medical Department had a most meager equipment. The Dodge Commission, the committee of inquiry appointed after that war, recommended that the Medical Department keep on hand not only an initial equipment of all medicines, hospital furniture, and stores which would not be materially damaged by long storage for the Army in being, but a year's maintenance for an army four times the actual strength. Little progress along this line was made until 1908, when an appropriation of $200,000 for the purchase of field supplies gave the necessary impetus to the work, which was carried on by money saved from the annual Medical Department appropriations during the succeeding years.

Unit supply system.—The principle of unit equipment was adopted after mature study. All articles required to complete the equipment of medical units, whether medical, quartermaster, or ordnance, were assembled and packed into suitable containers, and the packers' list and invoices prepared so that the complete equipment for an entire unit, excepting only the personal clothing of enlisted men and officers, could be shipped on the receipt by the depot of telegraphic instructions so to do. The only shortages in unit equipments were certain perishable supplies and transportation, such as wagons, ambulances, harness, and animals. While it was not possible to secure sufficient funds to provide a reserve for four times the size of the Army as recommended, actually supplies for a little less than three times the size of the Army were provided. In developing its unit supply system, the Medical Department began with a consideration of a recruit at the time he was called to the colors, at the recruiting station and the mobilization point, and carried the plan on through the training period, actual combat, evacuation, hospitalization, convalescent camps, and ultimate discharge from the service, and for each step provided a definite unit equipment. These units consisted of (1) emergency recruiting outfit, for the initial examination; (2) camp hospital equipment for emergency treatment immediately upon concentration; (3) base hospital equipment for the definitive treatment of the more serious cases in camps and cantonments and for the wounded after combat; (4) regimental combat equipment; (5) camp infirmary and camp infirmary reserve equipment; (6) ambulance company equipment; (7) field hospital equipment; (8) evacuation hospital equipment.

Mexican border mobilization.—The mobilization of the provisional division at San Antonio, Tex., in March, 1911, gave the Medical Department its first opportunity to try out its system of unit equipment. In response to a single telegram of a few words from the Surgeon General in Washington to the officer in charge of the medical supply depot at St. Louis, sufficient medical supplies for the entire division were loaded on cars and were actually in the yards at San Antonio before the arrival of the troops which constituted that division; not only that, but an officer was there to arrange these supplies and distribute them to the troops as required. Thereafter, a reserve of supplies was kept on the Mexican border.

As already noted, it was not planned to keep on hand perishable articles in the units, but to direct their purchase on the outbreak of war so that the units might be completed in every particular save transportation; this was done for the Mexican border mobilization. Judging from experience in simulated hostilities before the war, it was believed this plan would work well in time of war, and this actually proved to be the case.

The mobilization of the troops on the Mexican border in March, 1916, may be regarded, so far as the supply service was concerned, as the beginning of the entrance of the United States into the World War. The border mobilization merged into that for the World War, and the experience gained in the handling, procuring, assembling, and distributing of supplies, and the outfitting of these troops, proved of inestimable value to the Supply Division. The unexpected mobilization and transportation of the National Guard, and the distribution of and maintenance therefor, of equipment served as a test of the organization of the supply service and as an actual school of training for officers in supply duties. Before demobilization from the border had become an accomplished fact, the call had been issued for the larger mobilization for operations overseas. Large stocks of supplies had been accumulated on the Mexican border, and these were now used in developing hospital facilities to supply the expedition into Mexico. In April, 1916, a local depot had been established at El Paso. Another depot was soon established at San Antonio to provide for troops in the eastern end of Texas. Base and evacuation hospitals which had been stored at El Paso and at San Antonio were promptly shipped overseas. One base and four evacuation hospitals actually reached Jersey City in time to accompany the first expedition to France.

Council of National Defense.—The Council of National Defense was authorized by the national defense act, approved August 29, 1916, which act also provided that this council, made up of the secretaries of several of the Government departments, should have an advisory commission consisting of not more than seven persons having special knowledge of some industry, public utility, the development of some natural resource, or being otherwise specially qualified, in the opinion of the council, for the performance of the duties required in the bill providing for such an advisory body. A physician who was appointed on this advisory council organized a special board on medical matters. The passage of this act also resulted in the formation of committees and associations for preparedness in all lines of activity, professional as well as commercial. The various branches of the medical profession—physicians, surgeons, specialists, dentists, veterinarians, and medical schools and colleges—formed such associations. The manufacturers of pharmaceuticals and surgical dressings, surgical instruments, and hospital furniture and equipment likewise formed their committees on preparedness and went to work with promptness and vigor. On January 9, 1917, the Surgeon General of the Army formally recommended to the Secretary of War that a board be appointed for the standardization of all equipment and supplies used by the Medical Department in time of war.[3] The Secretary of War, as chairman of the Council of National Defense, asked for nominations from the Secretary of the Navy and the Secretary of the Treasury (United States Public Health Service) for membership on the proposed Committee on Standardization of Medical and Surgical Supplies. The committee was appointed on February 7, 1917.[4] An important meeting was held on April 7 and 8, 1917, with the supply officers of the various Government medical services. At this meeting were present representatives of most of the medical and surgical supply firms of importance in the country as well as medical representatives of the Council of National Defense. Government standards were discussed with the representatives, and arrangements were made to conform, as far as possible, to trade standards and packages. The officer in charge of the Supply Division of the Surgeon General's Office was a member of this committee. The Committee on Standardization of Medical and Hospital Supplies completed its work early in 1917, and a catalogue, consisting of four sections, setting forth the articles which it had been agreed would represent the standard supply table, was published by the Council of National Defense in May of that year.[5] The instruments selected by a board of very eminent surgeons were listed, illustrated, and catalogued and issued in May, 1917, as the "List of Staple Medical and Surgical Supplies, Part 1."[6] This list was revised and republished in December, 1917.

The various committees organized in the early part of 1917 as adjuncts of the Council of National Defense for the assistance of the purchasing departments of the Government were dissolved as parts of that council in the latter part of the same year under the provisions of section 3 of the Lever law act of August 10, 1917, prohibiting members of firms doing business with the Government from acting in an advisory or executive capacity to the Government. Many of the committees were regrouped into war service committees and rendered the same efficient service as they did when a part of the Council of National Defense.

The Committee on Dentistry, consisting of seven members, was formed early.[7] Their work was organized into five sections. One of these sections, that on dental supplies, was charged with the mobilization of all the resources of manufacturers who produced dental instruments and supplies, with the revision of the standard dental supply table, and with the coordination and cooperation of the dental supply industry. This committee submitted a revision of the dental supply table which was adopted and used as the basis for the purchase of the supplies required during the war.[8] A meeting of the manufacturers of dental supplies, called by the medical section of the Council of National Defense for April 11, 1917, was attended by representatives of practically all the large manufacturers of dental supplies. Through subsequent action as a result of the meeting in question the dental supply industry was mobilized.

As it proved, there was a great shortage in dental supplies, so newly appointed dental officers were notified that if they brought their personal supplies with them they would be purchased by the Government.[9] A list was also prepared showing just what would be so purchased.

CHANGES IN SUPPLY SYSTEMS.

During the war period, as always had been the case, control over medical supply was closely centralized in the Surgeon General's Office, where all matters of policy and all instructions relative to purchases were determined. The actual purchase and distribution of supplies were carried on at certain supply depots by direction of this office.

Very detailed plans, to be put into operation in the event of war, had been made by the Medical Department on March 9, 1914.[10] These plans had been approved by the General Staff, and were still applicable, in principle, when the

World War came, though the magnitude of the conflict was so far beyond anything expected in 1914 that the earlier plans were necessarily greatly amplified. It is proposed to give here, in brief outline, the wartime developments in the supply system and in the management of Medical Department finances. Full details concerning these important matters as applicable in the home territory and overseas will be found in the volume on Finance and Supply.

Supplies furnished by the Medical Department.—The Medical Department, in addition to its other duties, during the World War and for many years prior thereto, was one of the important supply departments of the Army.[11] It should be realized, however, that it was only one of several such departments, from each of which certain supplies were obtained.[a]

The Medical Department, through the Division of Finance and Supply, furnished all medicines, antiseptics, and disinfectants, all surgical instruments and appliances, all articles of hospital equipment, laboratory supplies, dental supplies, X-ray supplies, veterinary supplies, and its own stationery, blank books and blank forms. It also supplied certain medical articles of equipment for medical officers and men, and the greater part of the equipment of field medical units. Early in the war the development and production of gas masks and of other articles relating to gas warfare was made a function of the Medical Department. (See Division of Gas Defense, p. 504.) Later this was turned over to a newly created organization, the Chemical Warfare Service.

Supply depots.—At the beginning of the war the Medical Department had in operation, medical supply depots at New York, Washington, St. Louis, San Antonio, El Paso, and San Francisco.[12] Taken together, these depots had two functions—the procurement of supplies and their storage and issue. Medical supply officers were generally disbursing officers for Medical Department funds. The New York depot was the main depot for the purchase of all Medical Department supplies, except field supplies, which, exclusive of hypodermic tablets, were handled by the Washington depot. St. Louis was of secondary importance to New York in the purchase of medical supplies. All the depots except Washington distributed all classes of supplies. Washington distributed only field supplies. San Antonio and El Paso were issue depots for the troops on the Mexican border.

Procurement of supplies.—Supplies, in the main, were purchased from the trade by the medical supply depots. Biologicals, so called, were prepared by the laboratory of the Army Medical School, and a few articles were manufactured from time to time in the depots. The making of purchases other than at supply depots was discouraged, except with reference to diphtheria antitoxin,[13] but could be made, in emergency, by senior medical officers of commands.[14]

In determining the semiannual purchases, the three main distributing depots (New York, St. Louis, and San Francisco) were required to submit estimates of the quantities of the different articles which it was anticipated would be needed for issue during the next ensuing half-year period. When these estimates were received in the Surgeon General's Office, they were consolidated and the items and quantities of each to be purchased were determined. The lists were then sent to the New York depot, where circulars inviting bids were printed. Most of these circulars were used in New York, but some were sent to St. Louis. The final awards were made in the Surgeon General's Office, and the depot officer concerned was then informed of these awards and was directed to place contracts with the successful bidders. Contracts were always made when the amount of the bid exceeded $500 and sometimes for lesser amounts, at the discretion of the Surgeon General's Office. The contracts, after they had been signed and compared, were also sent for approval to the Supply Division of the Surgeon General's Office. The greatest care was taken, by critical inspections at the depots, to make sure that all drugs, instruments, and other articles were up to standard.

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[a] For supplies furnished by other departments, see Relationship of Medical Department within the War Department, p. 106; also, Plate III.

The plan, so far as field supplies were concerned, was to have them complete for each Medical Department unit concerned. This had been effected by the cooperation of the Quartermaster and Ordnance Departments, which supplied a number of articles pertaining to such units. All the larger units were stored at the medical supply depots, but some of the smaller ones (regimental infirmaries) were also to be found at certain designated posts.

This applies, of course, to units which were in storage, but it should be understood that before the World War units like certain of those in storage were in actual use by both Regular Army and National Guard. It should be kept in mind that these units constituted a war preparation equally with those in storage.

Distribution of supplies.—Issues from the depots were made on requisition from medical officers in command of hospitals or from post surgeons. These requisitions were forwarded to the department surgeon concerned[b] who sent those for the standard annual allowance of supplies directly to the medical supply depot designated by the Surgeon General for issue, forwarding a copy to the Surgeon General. Special requisitions—that is, requisitions for quantities larger than allowed by the supply table, or for articles not on that table—were forwarded to the Surgeon General by the department surgeon after modification, if deemed necessary, before issues were made from a supply depot. Emergency purchases, as indicated above,[14] under special circumstances, could also be made by the surgeons at hospitals. Smallpox vaccine was asked for by letter to the department surgeon; typhoid vaccine, which by this time had become the triple vaccine, was also asked for by letter to the department surgeon, by whom the letter was forwarded to the Surgeon General, who, in turn, directed the issue from the laboratory of the Army Medical School. Other vaccines were furnished from the Army Medical School on special request.[13]

Disbursements and accounting.—Payments for medical supplies were made by the depot supply officer concerned when delivery had been actually accomplished.[15] Thus a great part of the disbursements of the Medical Department were made locally rather than in the Surgeon General's Office. With the war, however, especially just at its beginning, when National Guard troops were put on guard duty in small detachments, often where military medical attendance or supplies could not be procured, the number of vouchers for medicines and medical attendance greatly increased. As these were all sent to the Surgeon General's Office, the disbursements there were many times multiplied. For obvious reasons this state of affairs continued to a considerable extent throughout the war. That is to say, as compared with peace times, war conditions resulted in far more disbursements of this character by the Surgeon General's Office.

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[b] Commanding officers of general hospitals and surgeons of commands directly under control of the War Department forwarded requisitions directly to the Surgeon General, who acted upon them in a manner similar to that described for the department surgeon.

The accounts of all disbursing officers were audited in the Surgeon General's Office.[16] Equal responsibility was enforced with supplies and each medical officer accountable for them prepared returns;[17] these were checked in the Surgeon General's Office with the invoices and receipts, which were always exchanged, copies being sent to the Surgeon General's Office when there was a transfer of property from one officer to another.[17]

Changes caused by war.—On the declaration of war the Medical Department was confronted with the task of furnishing supplies and equipment vastly in excess of its requirements in time of peace. The stock of supplies on hand at the beginning of the war was sufficient to meet the needs of an Army of approximately 300,000.[18] Estimates had to be prepared, purchases authorized, a distribution system devised, additional warehouses secured, new depots established, and a force of sufficient magnitude to handle the situation secured. While the expansion was enormous, it was not found necessary, during the war, to change the system in its essential details. A very drastic change which was made just after the armistice will be referred to later. The modifications found necessary so long as medical supplies were under the jurisdiction of the Medical Department, or until November 15, 1918, were mainly in a way of increased elasticity. This was notably true in respect to permitting local purchases[19] and the approval of vouchers for medical attendance when military facilities were not available.[20] This was an important change, especially in view of the fact that lack of elasticity in these particulars operated disastrously in the Spanish-American War.

In the nature of things there could be no decentralization in purchasing at home; on account of the threatened shortage, due to the enormous demands of the Army as a whole and to other war demands, a central agency (in this case a section of the Finance and Supply Division of the Surgeon General's Office) had to keep in close touch with the agencies coordinating all purchases throughout the country. The question of the purchase of medical supplies abroad does not enter into the present discussion; it should be noted, however, that the Finance and Supply Division of the Surgeon General's Office heartily supported the methods pursued in this matter by the chief surgeon, American Expeditionary Forces.

Veterinary supplies presented a peculiar problem. Formerly they had been furnished by the Quartermaster Department, of which the veterinarians were then a part.[21] The Veterinary Corps was created a part of the Medical Department by the act of June 3, 1916.[22] Funds did not become available to that department for the purchase of veterinary supplies until June 15, 1917.[23] To bridge over the interval, on request of the Surgeon General, June 12, 1917, the Quartermaster General approved the transfer of veterinary supplies which he had on hand to medical supply depots, and this was effected.[24] Early in 1917 the preparation of a veterinary supply table had been begun and this work was continued and finally completed in the autumn of the same year.[25] Standardization of veterinary instruments was also accomplished.[25] A list of the medicines contemplated for this purpose was furnished the Committee on Pharmacy of the Council of National Defense on April 19, 1917. It was decided to utilize St. Louis as the procurement depot for veterinary supplies.[26] The officer in charge was notified of this decision April 21, 1917, and informed that a veterinary officer would be assigned as an assistant. Delay in securing standard samples of instruments caused delay in purchases. Veterinary officers coming into the service were therefore requested to bring their personal instruments with them for purchase by the Government. No great amounts were purchased under this plan, however, but old types were utilized and no very serious inconvenience resulted.

WAR PERSONNEL.

At the declaration of the war the personnel of the Supply Division was as follows:[27]

Officers on duty in	1
Civilian personnel, Supply Section	8
Civilian personnel, Disbursing Section	3
Total	12

On November 11, 1918 the officers assigned to the division were as follows:[27]

In general charge and in charge of purchases	1
In charge of distribution	1
In charge of dental requisitions	1
In charge of veterinary requisitions	1
Motor ambulances [c]	1
Hospital requisitions	1
Assistant, dental requisitions	1
Assistant, veterinary requisitions	1
Assistant, hospital requisitions	1
Assistant, hospital requisitions	1
Assistant, distribution and finances	1
Transportation	1
Assistant, transportation	1
Disbursements	1
Assistant, disbursements	1
Statistics	1
Assistant, statistics	1
Assistant, statistics	1
Assistant, statistics and stock record	1
Assistant, distribution	1
Requirements	1
Production	1
Assistant, motor ambulances [c]	1
General	1
Personnel	1
Assistant, personnel	1
Overseas shipment	1
Assistant, finances	1
Total	28

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[c] Attached to Motor Transport Corps.

Civilian personnel:	
Administrative audit of accounts	77
Supply	84
Examination of property returns	37
Disbursements (finance)	12
Total	210
Grand total	238

At the maximum, 16 officers of the Medical Corps were on duty with the Supply Service. Three hundred and thirty-one officers of the Sanitary Corps and 1,471 enlisted men were found at supply depots at home and abroad.[28]

WAR APPROPRIATIONS AND DISBURSEMENTS.

The appropriation made by Congress for the fiscal year 1917 was $4,500,000. From the time war was declared until July 1 (two and a half months), the Finance and Supply Division had actually placed contracts for $11,712,000 worth of medical supplies under the urgent deficiency act approved June 15. The deliveries called for were such as to insure an adequate amount being on hand when the National Army camps were opened.[29]

In the Army appropriation act for the fiscal year 1918, approved May 12, 1917, the sum of $1,000,000 was appropriated for the Medical Department. The act of June 15, 1917, covered an additional $29,780,000. These sums proving inadequate, an appropriation of $100,000,000 was made October 6, 1917, and a further deficiency appropriation of $33,000,000 was made July 8, 1918.[30]

The act making appropriations for the support of the Army, and for other purposes, for the fiscal year 1919, approved July 9, 1918, appropriated $267,408,948 for the Medical and Hospital Department. The first deficiency act, approved November 4, 1918, added $30,000,000 to this, and authorized the incurrence of indebtedness, in addition thereto, up to $65,000,000.[31]

On July 1, 1918, the Chemical Warfare Service was created and was charged with all matters pertaining to gas warfare, defensive as well as offensive, and to this service was transferred, early in July, all personnel engaged in the production of gas masks, together with all property, obligations, and funds pertaining thereto. These funds amounted to $12,105,000 of the 1918 appropriations and $68,697,000 of the 1919 appropriation, or a total of $80,802,000.[32]

When the procurement, assembly, issue, and maintenance of motor ambulances and motor cycles were transferred to the Motor Transport Corps, August 31, 1918, there was also transferred $23,117,614.79 of the 1919 appropriation and $1,750,393.45 of the 1918 appropriation, together with all motor ambulances and motor cycles previously acquired by the department, including those under contract.[33]

Of the total of $297,408,948 appropriated for the Medical Department for the fiscal year 1919, therefore, $23,117,614.79 were transferred to the Motor Transport Corps, $68,697,000 were transferred to the Chemical Warfare Service, $54,000,000 returned to the Treasury, $9,000,000 remained unobligated, and $166,589,333.21 were expended or obligated for supplies and services. There was disbursed during that year also $14,767,893.95 of the appropriations for former years.[31]

EARLY ESTIMATES AND ACCOMPLISHMENTS.

Estimates.—When it became apparent, in March, 1917, that the entry of the United States into the World War was imminent, the Supply Division of the Surgeon General's Office began computing its estimates for an Army of 1,000,000 men. While these computations, of necessity, on account of the limited force available, were made by rule of thumb, the results, on the whole, were as successful as a more elaborate calculation might have proved. The total quantity of supplies comprising the field equipment for a division was determined, and 40 times that quantity, increased to cover replenishment, was ordered. The standard supply table of hospital equipment had the allowance of every item thereon for stations having 1,000 population. The quantity of such articles required for the care of 1,000,000 for one year would normally be 1,000 times that for 1,000 troops, and this was taken as the basis for procurement. The instructions, as originally issued, called for the purchase of field equipment for the entire million troops,[34] because previous experience had demonstrated that it took a longer time to procure that class of equipment than it did to secure supplies for general hospital use. The first instructions for the purchase of hospital supplies called for those necessary for 500,000 men.[35] Shortly after the issuance of these instructions the procuring officers were directed to increase the quantity to that for 1,000,000 men. These procurement instructions were issued to the officers in charge of the medical supply depots at Washington, D. C., and New York City. These officers began at once a canvas of the market, and of the firms dealing in such commodities, and conducted such negotiations as were possible, looking to the procurement of these supplies, pending the appropriation by Congress of the necessary funds for their purchase.

Supply depots.—When war was declared, April 6, 1917, the Medical Department, as already noted, had six medical supply depots in active operation within the United States.[12] The depot at El Paso, Tex., having served its purpose, was discontinued in August, 1917, and its supplies were transferred to the depot at San Antonio, Tex.

To meet the prospective needs in Mexico, there had been sent to the El Paso depot one standard base-hospital equipment, with 500 bedsteads and mattresses, nine evacuation hospitals, two field hospitals, two ambulance company equipments, and a large quantity of furniture and bedding.[36] Of these units, the base hospital, including bedsteads and mattresses, and four evacuation hospitals, were sent to New York to accompany the first convoy to France.[37] The remaining evacuation hospitals were shipped to France prior to the discontinuance of that depot.[37]

It became manifest, as soon as the troop mobilization and camp locations had been determined upon, that the existing facilities would be inadequate and that new depots at other locations would be necessary. Under authority from the Secretary of War, of May 19, 1917, new depots were established at Chicago, Philadelphia, and Atlanta.[38]

The requirements for storage space for the reception and issue of supplies increased so rapidly that new buildings had to be added at the depots from time to time. By the end of June, 1918, storage space available in the depots was as follows:[39]

	Square feet.
Atlanta, Ga	146, 000
Chicago, Ill	177, 000
Louisville, Ky	45, 000
New York City	185, 000
Philadelphia, Pa	192, 000
St. Louis, Mo	347, 000
San Antonio, Tex	48, 000
San Francisco, Calif	112, 000
Washington, D. C	270, 000
Total	1, 522, 000

There were also in operation overseas embarkation warehouses at New York City and Newport News, Va. The warehouse at New York was on Pier 45, North River, and had 80,000 square feet of floor space; the warehouses at Newport News were in Government-owned buildings having 50,000 square feet of floor space.[39]

Inasmuch as motor ambulances were being procured by the Medical Department, the chassis at one place and the body at another, it became necessary to establish a central assembling point at which the bodies could be mounted on the chassis and the machines tested out before distribution to the points where needed. A medical officer was ordered to Louisville for duty to secure the necessary buildings and equipment, the department being in receipt of an offer from the president of the Kentucky Wagon Works of that city to permit the use of a part of his buildings and grounds for that purpose.[40] These buildings, with the modifications and new construction necessary, facilitated the handling of the situation very satisfactorily. New construction was promptly effected and the depot started to function, July 19, 1917, by the receipt of 100 Ford ambulances and chassis, which were furnished from the local branch of the Ford Motor Co. at Louisville.[41]

Plans for the base hospital at every camp included three warehouses for the storage of Medical Department supplies and equipment. It was decided in May, 1917, to utilize these warehouses for the camp medical supply depot [42] which, it was early foreseen, must be established at every mobilization camp for the proper supply of unit equipment to the organizations to be mobilized there and for their convenience in the way of replacements and maintenance while in camp. It was thought that the medical supply officer, being accountable for all the medical property in the camp, could issue the supplies to the troops and also act as property officer of the base hospital. His personnel was to be selected from the members of the incoming draft, with available men of the enlisted force of the Medical Department who had had training in property work prior to mobilization.

Initial equipment.—The initial equipment of every individual camp was calculated and the lists, together with the necessary instructions relative to their issue, were sent to the designated issuing depots August 8, 1917, and copies of the lists of equipment were sent to the medical supply officers at the several camps on August 12, 1917.[43] This initial equipment consisted of the equipment for a 500-bed hospital and a three months' allowance of medicines and medical supplies for the regimental dispensaries based on the proposed strength of the different organizations to be mobilized in the respective camps. Such unit equipment as was not available at that time was sent later, as it became available. Additional equipment for the base hospital, and to some extent for the dispensaries, was to be furnished on requisition at a later date as required. A sufficient quantity of supplies not having reached the depots at Chicago, Philadelphia, and Atlanta to permit them to issue the base hospital equipment, the depot at New York was directed to ship to the camps situated in the territory supplied by those depots. It was thought, before mobilization was accomplished, that the issue of supplies could be decentralized to department surgeons and possibly to the surgeons of the camps, but it was soon found that this method could not be continued on account of the imperfect distribution of existing stock and of the tendency at all camps to ask for quantities in excess of their needs in order to have it on hand against an emergency and in excess of the availability of the supply. All requisitions were thereafter sent through the Surgeon General's Office and were filled from the stocks where they were available and in quantities deemed by that office to be sufficient.[44]

During June and July, 1917, the Medical Department was confronted not only with necessity of determining and providing the initial equipment for the mobilization camps, but with the duty of finding officers for the various camp medical supply depots, securing their commissions, and having them transported to the scenes of their future activities before the arrival of the supplies, which, in turn, had to reach the camps prior to the arrival of the troops. As in many instances supplies arrived at the camps before buildings were ready to receive them, they were stored wherever space could be found—in farm buildings, in the open, or under canvas. Every medical supply officer of these camps had to adapt himself to existing conditions and in the beginning to remain on duty the whole 24 hours, if need be, since he was the only representative of the Medical Department present to care for the supplies. With the arrival of troops, enlisted personnel were detailed to duty in the improvised depots, and conditions began to improve. As time passed the needed storehouses were completed and the camp medical supply depots were stocked and in full operation.

It became apparent very soon after the mobilization had been completed that the first estimates for hospital beds at home were entirely inadequate.[45] This required an equal increase in all medical supplies, but, fortunately, time was given for this. It was soon found necessary also to equip the base hospitals at all the camps so that they might treat every class of disease and injury. This required a more elaborate equipment for these hospitals than had been originally planned. No great difficulty was experienced in obtaining the needed equipment, although some delay ensued in supplying it.

Personnel.—The Sanitary Corps was authorized June 30, 1917,[46] to provide technical and nonmedical personnel for the various activities of the Medical Department. This corps made it possible to obtain officers for duty as supply officers, purchasing agents, X-ray technicians, automobile and accounting experts, and thereby provide for the development of an adequate personnel for the supply service. Of the 331 officers of the Sanitary Corps and the 1,471 enlisted men, Medical Department, on duty in the various supply depots at home and abroad, 425 were with special units.[28] The best obtainable officers and men were selected for this service, and the greatest care was taken to eliminate the physically unfit, to the end that those remaining might be able to endure the hardships and vicissitudes of active campaign.

Training.—Training schools were established and every effort made to insure that every officer, noncommissioned officer, and private was fully qualified technically before he was assigned to supply duty.[47] Of the 331 officers of the Sanitary Corps engaged in supply work, 288 had risen through the grades of private and noncommissioned officer to officer.[48]

Drugs.—By judicious methods of procurement an ample supply of drugs was obtained, with the exception of a few alkaloid substances, such as atropine and homatropine, of which the supply was limited and difficult to secure.[49] The importation of digitalis from abroad was superseded by domestic production and a standardized tincture was prepared at the College of Pharmacy, University of Minnesota. The production of arsphenamine was improved and increased until the supply was nearly sufficient to meet the demands. The toxicity of the domestic product was so reduced that the best grades finally equaled or excelled the German salvarsan imported prior to 1914.

Blank forms.—In consequence of the great expansion of the Medical Department and of the inexperience of the vast majority of the personnel, enormous quantities of blank forms were used. Resort to private printers was necessary to meet a large part of this demand. The increased range of activities of the Medical Department required the adoption of a few additional forms, but, as a whole, the standard forms in use proved satisfactory and sufficient to meet the requirements. The field medical supply depot in Washington was the distributing depot for these blank forms. Shipments were made in bulk to the main distributing depots and to the camp medical supply depots. From these distribution was made to the hospitals and other units in their respective areas.[50]

Surgical dressings.—Soon after war was declared contracts for vast quantities of supplies were entered into with the surgical dressing manufacturers. As time passed it became necessary, in order to maintain the supply, for the Government to procure the gray goods from the mills and to furnish to the dressing manufacturers such quantities as they could handle, having the remainder bleached or finished wherever possible. During the year 1917, 28,776,000 yards of absorbent gauze, 34,000,000 sublimated gauze packets, 60,119,200 compressed bandages, 62,746,127 roller bandages, 8,423,580 first-aid packets, 10,000,270 individual packets, and 600,000 shell-wound packets were produced and delivered.[51] Arrangements for the preparation of large quantities of surgical dressings were made with the American National Red Cross.[51] The Medical Department furnished all the materials and the various chapters of the Red Cross prepared the dressings. Many thousands of such dressings were sent abroad. The Red Cross also rendered valuable service by making nightshirts, operating gowns, pajamas, and other articles, from materials furnished by the Medical Department.

Surgical instruments.—The procurement of sufficient surgical instruments was the most difficult of the supply problems. Since the bulk of the surgical instruments in use in the United States before the war were imported from Germany or from England, and since this source of supply was closed by the war, it became necessary to call upon the few domestic surgical instrument manufacturers for greatly increased production, and to develop new sources of supply.[52] As a result of a campaign for this development, surgical needles, the entire supply of which had formerly been imported, were now obtained from domestic sources in sufficient quantities and of satisfactory quality. Toolmakers, cutlery manufacturers, and jewelers contributed to increase the supply of forged and finished instruments. Standardization of surgical instruments made possible this increased production.[3]

Ward equipment.—During the fiscal year ending June 30, 1918, 251,628 bedsteads and full equipment therefor were procured and distributed.[53] The supplies for 35 base hospitals established at home camps were furnished and the equipment for 32 additional base hospitals was sent abroad. The major portion of the equipment for the 32 hospitals sent abroad was supplied by the Red Cross. Twenty-six general or other large hospitals were equipped at home.

Litter carriers.—Two types of litter carriers were designed: [54] (1) A hospital wheeled litter carrier, which was light in weight, cheap, easily knocked down and boxed for overseas shipment, and capable of being readily assembled by inexpert mechanics; a special rest readily converted this carrier into a temporary operating table; (2) a field litter carrier, by using which two litter bearers could handle two wounded on litters, and which might be used as a trailer behind the standard motor ambulance. These designs were approved and the supply of the litters controlled by the Finance and Supply Dvision.

Gas-defense supplies.—By direction of the Secretary of War, the development and production of gas masks and other equipment used in gas defense was made a function of the Medical Department,[55] and remained so until, July 1, 1918, when the Chemical Warfare Service was created. (See Division of Gas Defense, p. 504.) While the Gas-Defense Service of the Surgeon General's Office supervised all matters of personnel, training, design, and manufacture of gas-defense equipment, requisitions for this material went through the usual channels to the Finance and Supply Division, which made disbursements for and controlled the distribution of these supplies, as well as of others used by the Medical Department.[56]

Motor ambulances and motor cycles.—A special organization was developed in the Finance and Supply Division for the purchase, production, inspection, and maintenance of motor ambulances, motor cycles, spare parts, and equipment.[57] This work was under the direction of automobile and business experts, and included a directing officer in Washington, D. C.; a motor ambulance experimental station, Washington, D. C.; a motor ambulance supply depot, Louisville, Ky.; a motor ambulance assembly base, American Expeditionary Forces; and stations for inspecting and testing ambulance chassis, ambulance bodies, spare parts, trailer chassis and bodies, motor cycles, etc., at each plant in the United States where they were produced. In addition to the procurement, production, and inspection of motor ambulance equipment, a new design of knockdown ambulance body was developed and put into production, the standard ambulance chassis was improved in spring suspension, shock absorbers, starting of engine, driver's apron and windshield, drainage of cooling system, radiator support, and other minor details. A special "spare parts A" equipment was provided for each ambulance; and a "spare parts B" equipment, carried in a special spare parts trailer and designed to take care of all except major repairs and accidents in service, was provided for each ambulance company. A book of "Information and Instructions" covering equipment, spare parts, repairs, and maintenance for United States standard motor ambulances and United States standard motor cycles in the service of the Medical Department, United States Army, was compiled and distributed.[58] It contained lists of all equipment, spare parts, etc., as well as directions for inspection of ambulances by drivers and mechanics, and instructions for assembling, adjustment, and maintenance of each ambulance chassis unit. A supply, repair, and salvage depot was established at Louisville, Ky., for the upkeep of ambulances and motor cycles in the United States. Tentative drill regulations for the United States standard closed ambulance were published and distributed.[59]

Vaccines.—Typhoid and other bacterial vaccines were forwarded in quantities from the Army Medical School, Washington, D. C., to the various medical supply depots, including those located at the cantonments, whence they were issued direct to surgeons of organizations.[60] Arrangements were made to have an ample supply of smallpox vaccine available in the vicinity of each camp, to be promptly furnished to the camps upon request of the medical supply officers.

X-ray equipment.—The officer in charge of X-ray work was a member of the subcommittee of the Council of National Defense which had charge of the standardization of apparatus, and also acted in an advisory capacity to the supply division of the American Red Cross. This made it possible to compile a standard list of X-ray apparatus which was adopted by the Council of National Defense and adhered to in all essentials by the Finance and Supply Division of the Surgeon General's Office and by the Red Cross. This standard list included both stationary and portable apparatus.[61] Manufacturers of X-ray apparatus cooperated so thoroughly that there was no difficulty in securing, at a fair price to the Government, all of the apparatus needed throughout the duration of the war. Not only was a sufficient quantity of X-ray apparatus and supplies of all kinds shipped abroad for the use of both stationary and mobile hospitals with the American Expeditionary Forces, but it was also furnished in adequate quantities for military hospitals at home.

Hospital supplies shipped overseas.—Pursuant to cable requests from overseas April 19, 1918, the equipment of base hospitals sent abroad was increased to accommodate 1,000 patients with a crisis expansion for an additional 1,000.[62] The complete equipment of one such hospital, including steam sterilizer and portable disinfector, weighed 150 tons and occupied over 30,000 cubic feet of space. Evacuation hospitals likewise were increased to a capacity of 1,000 patients, and the equipment of 10 such was forwarded overseas prior to June 30, 1918.[63] Fifteen evacuation hospitals equipped according to the Manual for the Medical Department had been sent in the summer and all of 1917.[63] During the period November 25, 1917, to June 30, 1918, there were shipped to the expeditionary forces in France 31,099 tons of Medical Department supplies occupying a total space of 3,771,810 cubic feet.[63]

LATER ACCOMPLISHMENTS.

The difficulties of the Finance and Supply Division were perhaps greatest in the earlier stages of the war, when plans for the supply of a large war Army as compared with a small peace Army had to be made and at the same time medical supplies had not only to be procured but also to be put on the ground in the many camps, posts, and stations, and delivered to ports for shipment overseas, and personnel had to be trained to carry out all the extremely technical details. The second year of the war, however, presented special difficulties of scarcely less importance, when production had to be vastly increased, markets developed, and new sources of supply found.

The camp medical supply depots developed at the several cantonments during the previous year proved a most valuable asset, both for the prompt and efficient supply of medical units at the camps to which they belonged and for the local training of enlisted and commissioned personnel in the nomenclature and the handling of medical supplies. These depots were maintained on a three months' supply basis—two months' stock on hand and one in transit. Requisitions for replenishment were forwarded monthly, and showed for the items entered the quantities issued during the previous month, the quantities remaining on hand, and the amount required to bring the stock up to three times the actual issue of the previous month. Emergency requisitions might be forwarded at any time and telegraphic requests could be made wherever conditions required.[14]

The need for competent medical supply officers continued to increase and the plan of establishing training schools for them, which had been inaugurated during the previous fiscal year, was continued and further developed. Enlisted personnel at the various camp supply depots who showed aptitude were promoted to the several grades of noncommissioned officers. The best of these were selected and sent to various training schools for medical supply officers. The principal schools were at Newport News, Camp Meade, and Camp Upton.[47] On finishing the course at one of these schools the men who qualified were commissioned as second lieutenants in the Sanitary Corps for duty at camps, general hospitals, or overseas, as the need might be. At Newport News were organized and equipped 13 depot companies for service in France.[64] Of this number eight had actually been sent abroad and the remainder were awaiting transportation at the time of the armistice. These companies consisted of three officers and 45 men each, all specially selected and trained.

Great difficulty was experienced in securing competent personnel for the larger depots, especially clerks, stenographers, and skilled labor. This was finally overcome by calling into the service limited-service men, physically qualified for duty at home but unfit for active military service abroad.[65] Many of these men were secured through advertisements inserted in trade journals. Others were obtained through the various draft boards. They were directed to report at the depots in New York, Chicago, St. Louis and Atlanta, where they were examined by the officers in charge and the best men selected for various specialties at those depots and elsewhere. These men, for the most part, proved faithful and efficient. The results of procuring laborers by this method, however, were unsatisfactory. Many of the men so obtained rendered very poor service.[65]

Arrangements were made with the United States Customs Service whereby the appraisers of that service were detailed to the inspection of Medical Department supplies at the mills and factories of the various contractors.[66] The services rendered by them were very satisfactory. As time passed and the need for supplies became more urgent it was found necessary to develop a field force of officers to keep in touch with the various contractors, to assist them in procuring raw materials, fuel, and labor, to stimulate production of supplies and delivery thereof under their respective contracts, and to prevent the contractors from disregarding Government orders in favor of civilian business.[66] While the number of officers actually on this duty was wholly inadequate, the results obtained in the increase of production fully demonstrated their value and the need for such a force.

Owing to a multitude of transportation difficulties, the earlier effort to accumulate in France a reserve of supplies adequate for combat needs had not been wholly successful. The needs of the troops in training could be met with comparative ease; but it required strenuous efforts to provide supplies overseas in sufficient quantities for the major offensives, and the demand for an increased flow abroad became daily more urgent and more insistent. Moreover, the need for men was stressed and the limited tonnage was largely used for transporting troops. This resulted in an acute shortage of freight tonnage and made it seem doubtful for a time whether medical and hospital supplies in sufficient quantities could be delivered to the overseas forces. The situation was further complicated by the numbers of trained workmen which the draft had taken from the various industries and who had been replaced by other personnel less skilled and capable, which necessarily resulted in an output reduced both in quantity and quality. Due to the shortage of labor and the excessive quantities of supplies required, the stocks of raw materials at home became generally depleted. Restrictions designed to prevent waste, to promote economy, and to insure equitable distribution were so rigidly enforced as to make very difficult the procurement by the Medical Department of necessary materials for fabrication. So many instrumentalities were created to visé procurements that the difficulties in placing orders were greatly increased, deliveries of the finished products were still further delayed, and prices were enhanced.

Owing to the increasing governmental control of raw materials and the resultant need of a more effective liaison between the procuring agency of the Medical Department and the War Industries Board, the Fuel Administration and other governmental agencies for allotting conveniences of which there was an actual or a threatened shortage, the central procurement office of the Finance and Supply Division, which had been established in Washington during the third quarter of the fiscal year ending June 30, 1918, was expanded to take over the procurement of practically the entire needs of the Medical Department, especially of medicines. surgical supplies, surgical, dental, and veterinary instruments.[68] Efficient buyers, selected from the drug and surgical instrument trade, were placed in charge of the procurement of those supplies of which they had special knowledge. Their work was properly controlled, directed, and coordinated by the Division of Finance and Supply. New sources of supply continued to be developed and existing sources to be increased.[69] This was especially true for surgical instruments and dressings. So urgent was the need for instruments that even the enrollment of jewelers and toolmakers as instrument manufacturers, which, as already explained, had been effected earlier, proved insufficient to meet the demands, and it was necessary to order blanks for forceps and surgical scissors from drop-forging firms, and to parcel these out to anyone who had the equipment necessary to convert them into finished instruments. Surgical needles continued to be made by domestic firms in ample quantities and of a quality equal to the best imported needles. Embroidery manufacturers undertook the preparation of special surgical dressings, particularly bias muslin bandages, of which some 5,000,000 were sent overseas. Various bleacheries were induced to aid the regular surgical-dressing manufacturers in the bleaching and finishing of absorbent gauze and crinolin. Due to the curtailment by the War Industries Board of the nonessential industries, many firms were free to undertake the production of supplies for the Medical Department, and although without previous experience in this particular line, delivered in due time very satisfactory articles.[69]

The motor ambulance supply depot at Louisville, Ky., continued to render active and efficient service as a Medical Department institution until August 31, 1918, when it was transferred to the newly formed Motor Transport Corps.[70] The spare-parts trailer, designed to meet the roadside repair requirements of an ambulance company for six months, which had been perfected during the previous year, was brought into production and a number completely packed and ready for immediate field service were shipped overseas.

A surgical instrument repair unit, consisting of 1 officer and 89 enlisted men, equipped with all the machinery and material necessary to repair and, if necessary, make any of the instruments in use, was sent to France in January, 1918.[71] A motor ambulance assembly unit, composed of 3 officers and 68 enlisted men who had been carefully selected from all of the important automobile plants in the United States, was sent to France in February, 1918.[72] This was followed by an accounting and auditing unit of the Medical Department, with 6 officers and 135 enlisted men, to which was intrusted the finance and property accountability of the Medical Department overseas.[72] Later an optical shop with 2 officers and 25 enlisted men, and still other lesser units were sent.[73] Additional men were supplied from time to time.

The automatic-supply table, which became effective for American Expeditionary Forces supply in June, 1918, proved very valuable.[74] This table showed the quantities of medical supplies of all kinds which would be required for the maintenance of 25,000 troops for one month, irrespective of the duties performed or whether in the zone of combat or in the zone of supply. The actual quantities shipped each month were based on these figures as given in the automatic-supply table, multiplied by a suitable factor corresponding to the aggregate number of troops which would be in the expeditionary forces during the ensuing month. While the quantities as given in the table did not prove ideal, the results obtained by its use fully demonstrated the value of such a plan. The table was being revised at the time of the armistice in accordance with the experience gained during the months it was in operation. This work was eventually completed and a satisfactory automatic-supply table, based on actual experience, will hereafter be available for the outfitting and maintenance of expeditionary forces should need arise.[75]

In 1918 the greatest difficulty the Medical Department experienced in forwarding supplies overseas was the lack of coordination between the movements of men and material, especially as regards priority schedules.[76] From the Medical Supply standpoint, ship tonnage allotted for troop movements overseas seemed out of proportion to that allotted for supplies. Supply bureaus were criticized for not providing material to keep apace with personnel. Men already existed and could be had immediately on call, while supplies, without which personnel was useless, did not exist and time was required to produce them; weeks and even months must elapse before supplies could be put in the hands of the men. In many instances the materials had not been mined or the crops planted out of which the supplies were to be made. Trees had to be felled and lumber sawed and transported before buildings could be erected in which to house the stores.

The task of furnishing adequate supplies which confronted the Medical Department at the beginning of 1918 was even greater than that which confronted it six months earlier. The volume of the supplies on hand which had been steadily rising since the beginning of the war and which had already reached proportions sufficient to equip and maintain an army of 2,000,000 men, had to be further augmented to meet urgent needs abroad. Men were being called to the colors in great numbers and the stream of troops flowing overseas had reached proportions, by June of 1918, that no one would have believed possible six months before.

The announced policy was to fully equip medical units at home.[77] This was successfully accomplished, but there was one important difficulty abroad which was never surmounted. This was due to the fact that unit equipments for divisional organizations, as well as for evacuation and base hospitals, could not, as a rule, be forwarded with the organization to which they belonged, the result being that often the equipment of one organization was shipped on more than one boat. The different vessels on which such equipment was forwarded did not always arrive at the same port. It was not of infrequent occurrence that articles of equipment intended for a given organization were landed at from two to five different ports, making it impossible, under existing traffic conditions in France, to issue to an organization its original equipment.[76]

Actually floating medical supplies was dependent on several different agencies, and the success of the Medical Department in this particular was largely due to harmonious cooperation with the Railroad Administration, the director of inland transportation, and the Shipping Board. Cars were secured and shipments made to the ports with a minimum of friction and maximum of efficiency, existing conditions considered. The diplomacy, constant watchfulness, and persistent efforts of port medical supply officers, assisted by the influence of port surgeons, secured the shipment of the major portion of the medical and hospital supplies in spite of the many difficulties. With the beginning of the major offensives came redoubled efforts to procure and to transport medical supplies overseas in sufficient quantities. The insistent demands of the expeditionary forces for more medical and hospital supplies resulted in a modification of priority schedules [78] and an increase in the tonnage allotted for such supplies, so that shipments gradually increased from 10,155 tons in July to 19,712 in October, 1918, the last full month's shipment before the armistice.[63] The total for the four months' period, July to October, inclusive, was 52,762 short tons, approximately 6,331,440 cubic feet. In November, 18,000 tons additional were shipped. Of the shipments made during this period, the following items of equipment are of special interest: [63]

Floated from July to October, 1918, inclusive, in addition to medical supplies taken with organizations.

Regimental combat equipment	150
Camp infirmaries	201
Camp infirmary reserves	150
Ambulance company equipment, medical supply only	130
Field hospital equipment, medical supplies only	80
Evacuation hospitals	54
Chests, mess	966
Chests, tableware	2, 079
Chests, cooking utensils	1, 349
Bedsteads	102, 484
Cases, general operating	1, 646
Cots, folding metal	55, 369
Mattresses and cot pads	122, 310

Complying with an urgent request made in August, 1918, for surgical instruments, 52 tons of all classes of instruments were floated from New York, arriving in France about the middle of September. They entirely relieved the situation, so far as surgical instruments were concerned.

At the time of the signing of the armistice the Medical Department had on hand or on order sufficient beds, mattresses, cots, cot pads, pillows, and other articles of bedding and ward equipment to provide lying-down accommodations for 1,000,000 men.[79] There were then being assembled at the port, Newark terminal, 60 base hospitals of 1,000 beds each. Very great difficulties were experienced during September and October, 1918, in securing sheets, pillowcases, blankets, and cooking utensils with which to complete the equipment of these hospitals. Deliveries were just beginning to assume satisfactory volume in the latter part of October.

With the cessation of hostilities the need for medical supplies greatly diminished. Steps were taken at once to stop production and to terminate contracts. There was an ample stock on hand to meet all prospective needs of the Army for many months to come, once the great battle casualties had ceased. Over a thousand contracts were terminated on the most advantageous terms obtainable for the Government. On November 15, 1918, the procurement work of the Medical Department was transferred to the Director of Purchase, of the Purchase, Storage, and Traffic, Division of the General Staff;[80] the distribution of supplies and depot activities to the Director of Storage;[80] the payment of all accounts and property accounting to the Director of Finance;[81] and the requirements duties to the Director of Purchase and Storage.[80] The Medical Department was thereby divested of all its supply activities except those pertaining to the procurement and distribution of artificial limbs; orthopedic and prosthetic appliances; biologicals, arsphenamine and other arsenicals; books, journals, and reprints; certain printing and binding; and the administrative examination of certain vouchers for civilian medical attendance, for medicines bought locally, and for laundry.[82] The Surgeon General, in his annual report for 1919, stated that the net result of the consolidation, for the most part, was most unhappy, and that for the sake of economy, efficiency, and facility of supply, the supply functions should be returned to the Medical Department as they were prior to the war.

From November 15, 1918, to the end of the period covered by this history, the Medical Department functioned only in an advisory capacity in so far as its supplies, other than those reserved to it, were concerned.

PERSONNEL.[d]

(April, 1917, to December, 1919.)

Darnall, C. R., Col., M. C., chief.
Fisher, H. C., Col., M. C., chief.
Wolfe, E. P., Col., M. C., chief.

Bernheim, J. R., Col., D. C.
Christie, A. C., Col., M. C.
Mount, J. R., Col., M. C.
Whitcomb, C. C., Col., M. C.
White, D. S., Col., V. C.
Fletcher, J. P., Lieut. Col., M. C.
Gentry, E. R., Lieut. Col., M. C.
Jones, E. C., Lieut. Col., M. C.
Strong, F. X., Lieut. Col., M. C.
Berry, E. J., Maj., S. C.
Fish, P. A., Maj., V. C.
Fishleigh, W. T., Maj., S. C.
Hodge, E. R., Maj., M. C.
Hurley, T. D., Maj., M. C.
Inman, D. B., Maj., S. C.
King, J. C., Maj., D. C.
LaGrinder, R. A., Maj., S. C.
Lennox, F. W., Maj., S. C.
McCartney, F. L., Maj., S. C.
Rogers, E. H., Maj., S. C.
Scheve, J. C., Maj., S. C.
Smelsey, Samuel, Maj., S. C.
Wallerich, G. W., Maj., S. C.
Wood, R. A., Maj., S. C.
Bonner, W. C., Capt., S. C.
Bradley, Mark, Capt., S. C.
Copping, J. B., Capt., S. C.
Dailey, Joseph, Capt., S. C.
England, Thomas, M., Capt., S. C.

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[d] In this list have been included the names of those who at one time or another were assigned to the division during the period April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division, and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Fahlbusch, Henry G., Capt., S. C.
Gilmour, Frederick, Capt., S. C.
Grinnell, A. G., Capt., S. C.
Hurtey, G. J., Capt., S. C.
Kelley, Howard, Capt., S. C.
Lowry, D. E., Capt., S. C.
MacClair, D. M., Capt., S. C.
Mims, M. D., Capt., S. C.
Moon, J. G., Capt., S. C.
Schaeffer, C. E., Capt., S. C.
Sly, Charles S., Capt., S. C.
Stoner, W. G., Capt., S. C.
Tanney, L. L., Capt., S. C.
Thompson, E., Capt., S. C.
Vane, Patrick P., Capt., S. C.
Van Putten, J. J., Capt., S. C.
Von Oschen, Herman, Capt., S. C.
Walsh, H. F., Capt., S. C.
Dagit, F. A., First Lieut., S. C.
Lang, L. W., First Lieut., S. C.
Langfield, C. E., First Lieut., S. C.
Lawshe, E. R., First Lieut., S. C.
McElrath, H. R., First Lieut., S. C.
Turner, E. P., First Lieut., S. C.
Warfield, S. R., First Lieut., S. C.
Whitfield, W. F., First Lieut., S. C.
Adams, S. K., Second Lieut., S. C.
Borneman, H. P., Second Lieut., S. C.
Butt, P. D., Second Lieut., S. C.
Federer, F. A., Second Lieut., S. C.
Fritz, G. E., Second Lieut., S. C.
Goff, W. S., Second Lieut., S. C.
Harrell, E. B., Second Lieut., S. C.
Kirk, W. E. J., jr., Second Lieut., S. C.
Miller, H. W., Second Lieut., S. C.
O'Neal, Nelson B., Second Lieut., S. C.
Platt, C. A., Second Lieut., S. C.
Thurrott, A. E., Second Lieut., S. C.

REFERENCES:

(1) Orders, January 16, 1899, signed by Surg. Gen. George M. Sternberg. On file Record Room, S. G. O. 50882 (Old Files).

(2) Orders, September 20, 1917, signed by Surg. Gen. W. C. Gorgas. On file, Record Room, S. G. G. O., 50882 (Old Files).

(3) Letter from the Surgeon General of the Army to The Adjutant General, January 9, 1917. Subject: Standardization Medical Department Equipment. On File Record Room, S. G. O., 164108 (Old Files).

(4) Indorsement from The Adjutant General to the Surgeon General of the Army, February 7, 1917. Subject: Appointment of Committee by Secretary of War. On File, Record Room, S. G. O., 164108 (Old Files).

(5) List of Staple Medical and Surgical Supplies Selected to Meet War Conditions; by the Committee on Standardization appointed by the Council of National Defense (4 parts), Part I, Surgical Instruments (May, 1917); Part II. Medicine, Antiseptics, Disinfectants, Chemicals, etc. (June, 1917); Part III. Laboratory Supplies (June, 1917); Part IV. X-ray Apparatus and Supplies (July, 1917). Published by Government Printing Office (1918), Washington, D. C.

(6) Ibid., Part I. Surgical Instruments, (May, 1917).

(7) Report of the chairman, Edward C. Kirk, Committee on Dentistry, Council of National Defense, April 22, 1917. On file, Record Room, S. G. O., 156772. (Old Files).

(8) Manual for the Medical Department, 1916, corrected to June 15, 1918; paragraphs 854 to 856, inclusive.

(9) Letter from the Surgeon General of the Army to dental surgeons, May 1, 1917. Subject: Dental Outfits. On file, Finance and Supply Files, S. G. O., 13291 F.

(10) General War Plans of the Medical Department, March 9, 1914. Prepared in the Office of the Surgeon General, United States Army, at the request of the Chief of Staff, as per letter, October 2, 1913. On file, Record Room, S. G. O., 93360 I (Old Files).

(11) Supplies furnished by Medical Department. Manual for the Medical Department, 1916, corrected to April 15, 1917, pp. 247 et seq.

(12) Annual Report of the Surgeon General, United States Army, 1918, p. 320. Preparedness of the Medical Department for War. By Lieut. Col. H. G. Fisher, M. C. On file, Finance and Supply Files, S. G. O., 12709E.

(13) Manual for the Medical Department, 1916, corrected to April 15, 1917, par. 843 (foot note 1, p. 250).

(14) Ibid., pars. 476, 786.

(15) Letter from the Surgeon General to officer in charge, field medical supply depot, Washington, D. C., December 20, 1917. Subject: Payment to Contractors. Similar letter sent to medical supply depots, New York and St. Louis. On file, Finance and Supply Division, S. G. O. $\frac{713\text{–}750.}{146}$

(16) Manual for the Medical Department, 1916, corrected to June 15, 1918, pars. 377 to 379, inclusive.

(17) Ibid., pars. 380 and 507.

(18) "Preparedness of the Medical Department for War," by Lieut. Col. H. F. Fisher, M.C., Medical Supply Division. On file, Finance and Supply Files, S. G. O., 12709 (Old Files).

(19) Letter from the Surgeon General to the camp division surgeon, November 16, 1917. Subject: Requisitions and Purchases of Supplies. On file Record Room, S. G. O., 400.312 (Requisitions).

(20) A. R., 1913, with changes to January 24, 1920, par. 1476.

(21) Memo, from B. B. Thompson, chief clerk S. G. O., to Col. E. P. Wolfe, Chief of Finance and Supply Division, S. G. O . Subject:Veterinary Supplies. On file, Record Room, S. G. O., 446.1 (Veterinary Supplies).

(22) Bull. No. 16, June 22, 1916, par. 16.

(23) Bull. No. 39, W. D., July 7, 1917.

(24) Letter from Surgeon General to Quartermaster General, June 12, 1917. Subject: Veterinary Supplies, and indorsements thereto. On file, Finance and Supply Division, S. G. O., 14700 H (Old Files).

(25) Veterinary Supply Tables, Article XXII, Manual for the Medical Department, 1916, corrected to June 15, 1918.

(26) Report of the medical supply depot, St. Louis, from Lieut. Col. Wickline, May 13, 1919. On file Record Room, S. G. O., 314.7 (Medical History, Medical Supply Depot, St. Louis) (M)-

(27) List of Personnel. On file Record Room, S. G. O., 024.6 (Finance and Supply Division).

(28) Figures compiled from monthly returns from supply depots. On file, Record Room, S. G. O., 319.1 (name of depot) (M).

(29) Bull. No. 33, W. D., September 9, 1916, p. 30. Bull. No. 39, W. D., July 7, 1917. Letter from the Director of Finance, W. D., to the Surgeon General of the Army, March 15, 1919. Subject: Semimonthly financial statement, with photostat copy of financial statement attached. On file, Record Room, S. G. O., 112.8–1.

(30) Bull. No. 30, W. D., May 22, 1917. Bull. No. 39, W. D., July 7, 1917. Bull. No. 59, W. D., October 17, 1917. Bull. No. 42, W. D., July 20, 1918.

(31) Bull. No. 43, W. D., July 22, 1918. Bull. No. 59, W. D., Nov. 18, 1918.

(32) Report from Director of Finance, W. D., to the Surgeon General, United States Army, September 23, 1919. Subject: Financial Statements. On file with the Chief of the Finance and Supply Division, S. G. O.

(33) G. O., No. 75, W. D., August 15, 1918.

(34) Letter from Surgeon General to officer in charge, field medical supply depot, Washington, D. C., May 25, 1917. Subject: Medical Supplies. On file, Finance and Supply Division, S. G. O., 14101 (Old Files).

(35) Letter from Surgeon General to officer in charge, field medical supply depot, Washington, D. C., May 15, 1917. Subject: Medical Supplies. On file, Finance and Supplies Division S. G. O., 14101 (Old Files).

(36) Letter from the Surgeon General to division surgeon, Southern Department, August 18, 1917. Subject: Transfer of Supplies. On file, Finance and Supply Division, S. G. O., $\frac{713\text{–}218}{5}$.

(37) Letter from Surgeon General to medical supply officer, port of embarkation, Pier 45, North River, New York City, August 23, 1917. On file, Finance and Supply Division, S. G. O., $\frac{783\text{–}539}{7}$.

(38) Letter from the Surgeon General to The Adjutant General, May 11, 1917. Subject: Request Authority to Establish Additional Medical Supply Depots, approved by Secretary of War, May 19, 1918, and by first indorsement, Adjutant General's Office, May 24, 1917. On file, A. G. O., 2596673 (Old Files).

(39) Letter from The Adjutant General to the president (Col. Charles B. Wheeler, Ordnance Department) of the board appointed under S. O., No. 129, par. 25, June 5, 1917. On file, Record Room, S. G. O., 192013 (Old Files).

(40) S. O., No. 132, par. 1, W. D., June 8, 1917, assigning Capt. John P. Fletcher to Jeffersonville Ind. Letter from the Surgeon General to Capt. John P. Fletcher, June 12, 1917. Subject: Proposal of Kentucky Wagon Works for Assembling Automobiles. On file, Finance and Supply Division, S. G. O., 14842 (Old Files).

(41) Telegram from Capt. John P. Fletcher to the Surgeon General of the Army, July 19, 1917. Subject: Ford Ambulances Received at Louisville. On file, Finance and Supply Division, S. G. O., 14842 (Old Files).

(42) Correspondence on medical supply depots. On file, Record Room, S. G. O., 169007 (Old Files). Supply Letter No. 17, Office of the Surgeon General, July 6, 1917. Subject: Camp Medical Supply Depots. On file, Record Room, S. G. O., 175339–T (Old Files).

(43) Letter from the Surgeon General to the medical supply officer at Camp Hancock (and various other camps), August 11, 1917. Subject: Medical Supplies. On file, Finance and Supply Division, S. G. O., $\frac{534}{1}$.

(44) Letter from the Surgeon General to Capt. William S. Shields, June 8, 1917. Subject: Medical Supply Depot, Atlanta, Ga. On file, Finance and Supply Division, S. G. O., 14827–H (Old Files).

(45) Letter from the Surgeon General to The Adjutant General, June 11, 1917. Subject: Estimates for Hospital Beds. On file, Record Room, S. G. O., 175339 C (Old Files).

(46) G. O., No. 80, W. D., July 6, 1917.

(47) Memo. from officer in charge, medical supply depot, Camp Meade, to the Surgeon General, April 16, 1918. Subject: Course of Instruction Given at Training School for Supply Personnel at Camp Meade (outlines course). On file, Record Room, S. G. O., 353 (Camp Meade) (D).

(48) Letter from Col. C. R. Darnall, M. C., to Brig. Gen. C. Richard, Acting Surgeon General, September 16, 1918. Subject: Report Concerning Promotion of Officers in Finance and Supply Division. On file, Record Room, S. G. O., 210.2 (Promotion in Sanitary Corps).

(49) Correspondence on supply of drugs. On file, Record Room, S. G. O., 444.1 (General).

(50) Letter from the Surgeon General to Crane Printing Co., October 16, 1917. Subject: Printing of 32,000 blanks (and other orders for printing). On file, Finance and Supply Division, S. G. O., 168 (Crane Printing Co.). Distribution. Letter from the Surgeon General of the United States Army to surgeon, Eastern Department, June 13, 1917. Subject: Medical Supplies. On file, Finance and Supply Division, S. G. O., 13969–12.

(51) Letter from the Surgeon General to Mr. Henry D. Gibson, general manager, American Red Cross, March 8, 1918. Subject: Order for Surgical Dressings. On file, Finance and Supply Division, S. G. O., $\frac{602}{78}$.

(52) Letter from the Surgeon General to Charles J. Pilling, chairman, War Service Committee July 29, 1917. Subject: Surgical Instruments. On file, Finance and Supply Division, S. G. O., 14636–85 (Old Files).

(53) Data compiled from reports of purchases furnished by field medical supply depots. On file, Finance and Supply Division, S. G. O., 713.

(54) Letter from the Surgeon General to commanding officers, field hospitals, May 24, 1918. Subject: Field Letter Carrier, Medical Department. On file, Finance and Supply Division, S. G. O., $\frac{750\text{–}714.}{613}$. Memo. from Col. William Moncrief, M. C., to Col. C. R. Darnall, M. C., April 12, 1918. Subject: Approval of Wheel Litter Carrier Designed in Surgeon General's Office. On file, Finance and Supply Division, S. G. O., $\frac{713\text{–}539}{549}$.

(55) Memo. from Assistant Chief of Staff, April 28, 1917, to The Adjutant General. On file, Mail and Record Division, A. G. O., 2575310 (Old Files).

(56) Letter from the Surgeon General of the Army to the Gas Defense Service, September 1, 1917, Subject: Gas Masks. On file, Finance and Supply Division, S. G. O., $\frac{523}{2}$.

(57) Correspondence on motor ambulances and motor cycles. On file, Division of Finance and Supply, S. G. O., 14842 (Old Files).

(58) Information and Instructions Covering Equipment, Spare Parts, Repairs, and Maintenance for United States Standard Motor Ambulances and United States Standard Motor Cycles in the Service of the Medical Department, United States Army. Office of the Surgeon General, Washington, D. C., May 1, 1918. Copy on file, Journal and Reprint Section, Finance and Supply Division, S. G. O.

(59) Tentative Drill Regulations for United States Standard Closed Motor Ambulances, Body Model "B," 1917; Body Model "AA," 1918. Office of the Surgeon General, Washington, D. C., May 1, 1918. Copy on file, Journal and Reprint Section, Finance and Supply Division, S. G. O.

(60) Supply letters Nos. 1 to 23, inclusive (consolidated and revised), W. D., Office of the Surgeon General, December 5, 1917; supply letter No. 24, W. D., Office of the Surgeon General, March 11, 1918, p. 3.

(61) List of Staple Medical and Surgical Supplies Selected to Meet War Conditions; by the Committee on Standardization appointed by the Council of National Defense (4 parts). Part IV. X-ray Apparatus and Supplies (July, 1917). Government Printing Office, 1918. Washington, D. C.

(62) Cablegram No. 949, from General Pershing to The Adjutant General, April 19, 1918. Subject: Increase in Personnel and Equipment of Base Hospitals. On file, Finance and Supply Division, S. G. O., $\frac{250}{101}$.

(63) Monthly Tonnage Report from Transportation Service at Port of Embarkation. On file with Chief of Finance and Supply Division, S. G. O.

(64) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1187.

(65) Letter from the Surgeon General to officer in charge, medical supply depot, San Antonio, Tex., July 10, 1918. Subject: Limited Service Men. On file, Record Room, S. G. O., 327.3 (San Antonio) (M).

(66) Letter from the Surgeon General to officer in charge, medical supply depot, New York, August 16, 1918. Subject: Inspections from Customs Appraisers. On file, Finance and Supply Division, S. G. O., $\frac{713\text{–}750}{353}$.

(67) Letter from the Surgeon General, United States Army, to officer in charge, medical supply depot, Philadelphia, Pa., August 17, 1918. Subject: District Officers, Production Department. Similar letter sent to the St. Louis, Chicago, and New York depots. On file, Finance and Supply Division, S. G. O., $\frac{713}{77}$ (Misc.).

(68) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1186.

(69) Correspondence. Subject: Purchase of Supplies. On file, Finance and Supply Division 268 (General Purchasing Office).

(70) G. O., No. 75, W. D., 1918.

(71) Memo. from the Surgeon General to War Plans Division, General Staff, June 4, 1918. Subject: Allowance, Officers, Sanitary Corps, Finance and Supply Division, Surgeon General's Office. On file, Record Room, S. G. O., 024.6 (Finance and Supply Division).

(72) Annual Report of the Surgeon General, United States Army, 1918, 321.

(73) Letter from Surgeon General to Adjutant General, March 12, 1918. Subject: Optical Units. On file, Record Room, S. G. O., Confidential Files (Movement of Troops 3).

(74) Automatic Supply Table, A. E. F. On file, Chief of Finance and Supply Division, S. G. O.

(75) Revised Automatic Supply Table. On file, Chief of Finance and Supply Division, S. G. O.

(76) Letter from Surgeon General to Chief Surgeon, American Expeditionary Forces, August 22, 1918. Subject: Cause for Delay in Sending Equipment. On file, Record Room, S. G. O., 321.6 (Y).

(77) Letter from department surgeon, Eastern Department, to the Surgeon General, July 6, 1917. Subject: Field Equipment. First indorsement from the Surgeon General to the department surgeon, July 11, 1917. On file, Finance and Supply Division, S. G. O., 13969(32) (Old Files).

(78) Priority schedules. On file, Record Room, S. G. O., Confidential Files (Priority Shipments).

(79) Compiled from reports of purchase furnished by field medical supply depots. On file, Finance and Supply Division, S. G. O., 713.

(80) Supply circular No. 102, War Department, Storage and Traffic Division, General Staff, October 24, 1918. Subject: Transfer of Certain Branches of Finance and Supply Division, Office of the Surgeon General. On file, Record Room, S. G. O., 024.6 (Finance and Supply Division).

(81) Memo. for the Surgeon General from Director of Finance, November 19, 1918. Subject: Payment of Accounts. On file, Record Room, S. G. O., 024.6 (Finance and Supply Division).

(82) Letter from the assistant to the Director of Purchase, Storage, and Traffic, November 9, 1918, to the Surgeon General. Subject: Procurement of Articles which will Remain with the Office of the Surgeon General. On file, Record Room, S. G. O., 024.6 (Finance and Supply Division).

CHAPTER VIII.

DIVISION OF SANITATION.

FUNCTIONS.

For many years the Division of Sanitation has been one of the permanent divisions of the Surgeon General's Office;[1] consequently there was no occasion to create a division in this case during the World War. In fact, many of the basic activities of the Division of Sanitation have been well defined and maintained during almost the entire history of the Medical Department of the Army. Included among these are the physical examination of officers and enlisted men, the selection of the recruit, the collection and compilation of statistical data of morbidity and mortality, and many other matters having to do with sanitation. Then, too, long before the World War, with the recognition and development of preventive medicine as a distinct branch of medical science, the functions of this division had become greatly amplified.

For many years before the war the Division of Sanitation had been rather the catch-all of the Surgeon General's Office. The reason for this was that, save the Record, Correspondence, and Examining Division, which was not equipped to handle anything outside its own work and which had no medical officer in charge, the only other divisions actually in being in the Surgeon General's Office itself were the Personnel and the Supply Division. It was, of course, perfectly easy to determine what subjects logically fell to them, and, save for records and hospital construction, everything else was handled by the Sanitation Division. It will be noted later that even during the war it was not freed from all extraneous business, yet primarily its function, both before and during the war, was to preserve the health of the Army.

The Division of Sanitation during the war was the responsible center in the Surgeon General's Office for the initiation, coordination, and direction, in an administrative sense, of measures of sanitation and disease prevention for all troops within the United States. The points of contact with outlying camps and stations were through camp, division, port, and department surgeons direct, on technical and professional subjects, and through military channels to commanding officers, where military or administrative questions were involved. When sanitary defects or deficiencies were brought to the attention of the Surgeon General's Office, immediate steps were taken to correct them, either by instructions sent to the camp surgeon, if the correction lay within his power, or by correspondence with the higher authorities of the War Department when such action was necessary. Ultimate reports as to action taken and results obtained were received and filed in this division.

Close cooperation with many of the other divisions in the Surgeon General's Office was insured by frequent formal and informal conferences. This was particularly the case in respect to the Division of Infectious Diseases and Laboratories.

In this connection it should be noted here that the Division of Sanitation, to a much greater extent than was the case in any other division of the Surgeon General's Office, dealt with the administration of the Army as a whole rather than with that of the Medical Department exclusively. This, of course, is due to the fact that the good health of troops enters into every military problem, and that in the last analysis local commanders are responsible for the sanitation of their commands equally with other matters pertaining thereto. On the other hand, as already indicated, the Medical Department is responsible for technical matters having to do with sanitation and the Division of Sanitation controlled here.

Within the limits of this chapter no detailed discussion is made relative to sanitary measures applied in the various camps and stations, which will be included in the volume on sanitation. The aim is to outline briefly the organization of the Division of Sanitation, as it functioned during the war period, and to review its activities within the Surgeon General's Office alone and not as reflected in the administrative and sanitary organizations in camps, cantonments, and other stations.

EARLY ORGANIZATION.

On April 6, 1917, upon our entrance into the World War, the Division of Sanitation was functioning for the peace-time needs of a Regular Army of approximately 175,000 officers and enlisted men. Only two medical officers were on duty in the division when war was declared.[2] A small permanent clerical force had been required and provided for some years, the larger number in connection with statistical and other work pertaining to medical records. The small pre-war organization, fortunately, was capable of expansion, and early in April, 1917, the Surgeon General, visualizing the immensity of the task confronting the Medical Department, and on recommendation of the chief of the division, brought into the office, as assistants to the latter, a group of four senior medical officers of the regular service, to each of whom was assigned the task of planning, organizing, and developing a special activity.[3] The previous training and experience of the officers so selected preeminently fitted them for the respective tasks assigned. This was the real beginning of the war-time expansion of the Surgeon General's Office in an administrative sense. The four separate activities thus initiated within the Division of Sanitation early in the war were: Hospitalization, medical officers[1] training camps, laboratory and infectious diseases, and field sanitation.

For some time during the early months of the war the foregoing activities were coordinated as regards policy and plans in the Division of Sanitation. Later, hospitalization, training camps, and laboratories and infectious diseases were placed in separate divisions, but the date when they began to function as independent divisions can not be fixed definitely, as no office orders are of record creating them. The chief of the division, having been ordered overseas, was relieved from duty in the Surgeon General's Office September 30, 1917, and it is certain that on and after that date, and probably long before, the three special activities referred to (hospital, training camps, and laboratories and infectious diseases) had no direct relation with the Division of Sanitation. The Hospital and Laboratories and Infectious Diseases Divisions continued as such to the end of the war. Upon the signing of the armistice Medical Department training camps were ordered abandoned, and the personnel then under training in them was reassigned or discharged. The Division of Medical Officers Training Camps[1] was discontinued on November 11, 1919, when its remaining functions were again taken over by the Division of Sanitation.[4]

The Division of Field Sanitation[5] was intended to confine its activities chiefly to the supervision of hygiene and sanitation at camps and cantonments in the United States, and, incidentally, to the administration of the newly organized Medical Department units to be concentrated in them. At its inception it was a division within a division, concentrating its attention on these subjects within the limited objective of camps and cantonments, while sanitation and hygiene, in a broader sense, as applying to the Army at large, to permanent posts and stations in the United States and the insular possessions, as well as to cantonments and camps, to the selection of the recruit, to medical records and permanent statistics, and to many other problems, were still handled by the parent division. A few months' experience with this tentative organization demonstrated that it was impracticable and undesirable to attempt to handle questions relating to sanitation in the field apart from those of general sanitation, and by the latter part of 1917 the Division of Field Sanitation, in its evolution, had gradually absorbed a great part of the function of the old Division of Sanitation. Eventually all the remaining functions of the permanent Division of Sanitation were consolidated with those of Field Sanitation, and the latter division ceased to exist as such, although a good part of the organization and personnel of the Division of Field Sanitation was continued, and served as the foundation for the reorganized Division of Sanitation, which was to "carry on" during the remainder of the war.[5]

EARLY PROBLEMS.

Among the early problems in the summer of 1917 (they were handled by the Division of Field Sanitation for the reason stated above) were: The formulation of sanitary regulations and rules for the prevention of disease to govern the new armies about to be mobilized; the development of a service of sanitary inspections; the selection of qualified medical officers for duty at each camp and cantonment during the period of construction.

In order that the Army might take advantage of the best professional opinion in the country, a conference was forthwith held in the Surgeon General's Office, attended by eminent sanitarians in civil life and by many experienced officers of the Medical Corps, in which was discussed and prepared a revision of the sanitary regulations then in force.[6] This revision was designated "Sanitary Regulations and Notes on Control of Communicable Diseases." Upon recommendation of the Surgeon General, these were published to the Army on August 10, 1917, as Special Regulations No. 28.[7] Though several important additional paragraphs were added from time to time, including the subjects of louse infestation and disinfestation, the examination of permanent food handlers, and the fitting of shoes, these regulations continued in effect during the entire war period. A circular of information regarding venereal diseases was prepared in the division early in the summer of 1917, which was printed in sufficient numbers to permit the placing of a copy in the hands of each enlisted man.

A sanitary inspection service was established July 1, 1917.[8] Especially qualified senior medical officers of the regular service were selected as special inspectors, and before troops were mobilized sanitary inspections of all camps of the National Guard and National Army and many of the large aviation and other special stations had been completed. The technical inspections at this time were limited to drainage, housing plans, water supply, and sewerage conditions. More extensive reference is made to the sanitary inspection service later in the chapter.

The medical officers selected as camp sanitary inspectors at this time were instructed during the period of construction of camps and cantonments to advise the quartermaster in regard to sanitary matters, to make a sanitary survey of the camp site and its surroundings, and to establish and maintain satisfactory sanitary conditions among the civilians and military artisans of the camp. These officers were advised also to establish relations with the local representatives of the Public Health Service, who were charged with the sanitation of the extra-cantonment zones, and to provide for an interchange with local health authorities of information in regard to communicable diseases. The Surgeon General required that a special report from these camp sanitary inspectors, submitted by telegraph on August 31, 1917, regarding the state of preparedness of each camp or cantonment for the reception of troops, the readiness of the hospital to receive patients, the degree of completion of the water supply, sewerage system, and arrangements for the disposal of other wastes, and the existing insanitary conditions, especially as to mosquito breeding, which could not be immediately corrected. In compliance with other instructions from the Surgeon General, each camp sanitary officer was required to forward on or after September 1, 1917, a monthly sanitary report describing in detail the conditions in the camp at the time the commanding general of the incoming division assumed command.[8] The first contingents of selective-service men for the newly organized divisions were sent to camps on September 5, 1917.[9] The general sanitation of camp and cantonment areas was well advanced before the arrival of troops. Unfortunately, hospitals were not completed; in fact, in several camps they were scarcely begun.[10]

For the divisions organized in September, 1917, division surgeons and sanitary inspectors had been selected by the Division of Field Sanitation and were already designated in the camps before the date set for the arrival of registrants under the first draft.

With few exceptions, the medical officers assigned to the higher administrative positions with the various divisions were selected from the Medical Corps of the Regualr Army, as previous training and experience appeared to fit them best for these duties.

REORGANIZATION AND EXPANSION.

From January 1, 1918, to the date of the signing of the armistice (November 11, 1918), the expansion of the Division of Sanitation was continuous. Changes were made gradually, without interfering in any way with the smooth working of the machine. New sections were created and former sections were reorganized from time to time, as changing administrative needs seemed to demand. The division, as organized at the height of its activities, comprised eight distinct administrative sections, some of which functioned more or less autonomously. The degree of expansion of the Division of Sanitation during the war is well indicated by comparing its growth in terms of personnel alone. In April, 1917, as already stated, only two medical officers, with a small group of civilian clerks, handled the work of the division for the small peace-time Army, while in November, 1918, there were required, and were actually on duty in the division, 52 commissioned officers and enlisted men and approximately 400 civilian clerks.[11] A roster of all commissioned officers on duty in this division during the war is given at the end of the chapter. The organization chart (Chart VIII) gives the designation and functions of the various sections of the reorganized division.

The organization and work of the various sections and subsections of the division are summarized in the following pages.

SECTION OF SANITARY INSPECTION.

Sanitary inspectors first appeared in the United States Army 99 years before the World War. A general order, dated April 21, 1818, contained the following paragraph relating to them: "The Assistant Surgeon Generals will forthwith commence the inspection of the Medical Department in their respective divisions, agreeable to the instructions they may receive from the Surgeon General." In March, 1821, when an act of Congress for the reduction of the Army abolished the office of Assistant Surgeon General, the duty of sanitary inspection seems also to have lapsed.

Medical Department inspection did not reappear until the Civil War. Several acts of Congress creating the office of medical inspector and defining its duties were passed during the war. The best definition of these duties and the final one is to be found in General Order 308, W. D., A. G. O., September 12, 1863, which is quoted:

WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
Washington, September 12, 1863.

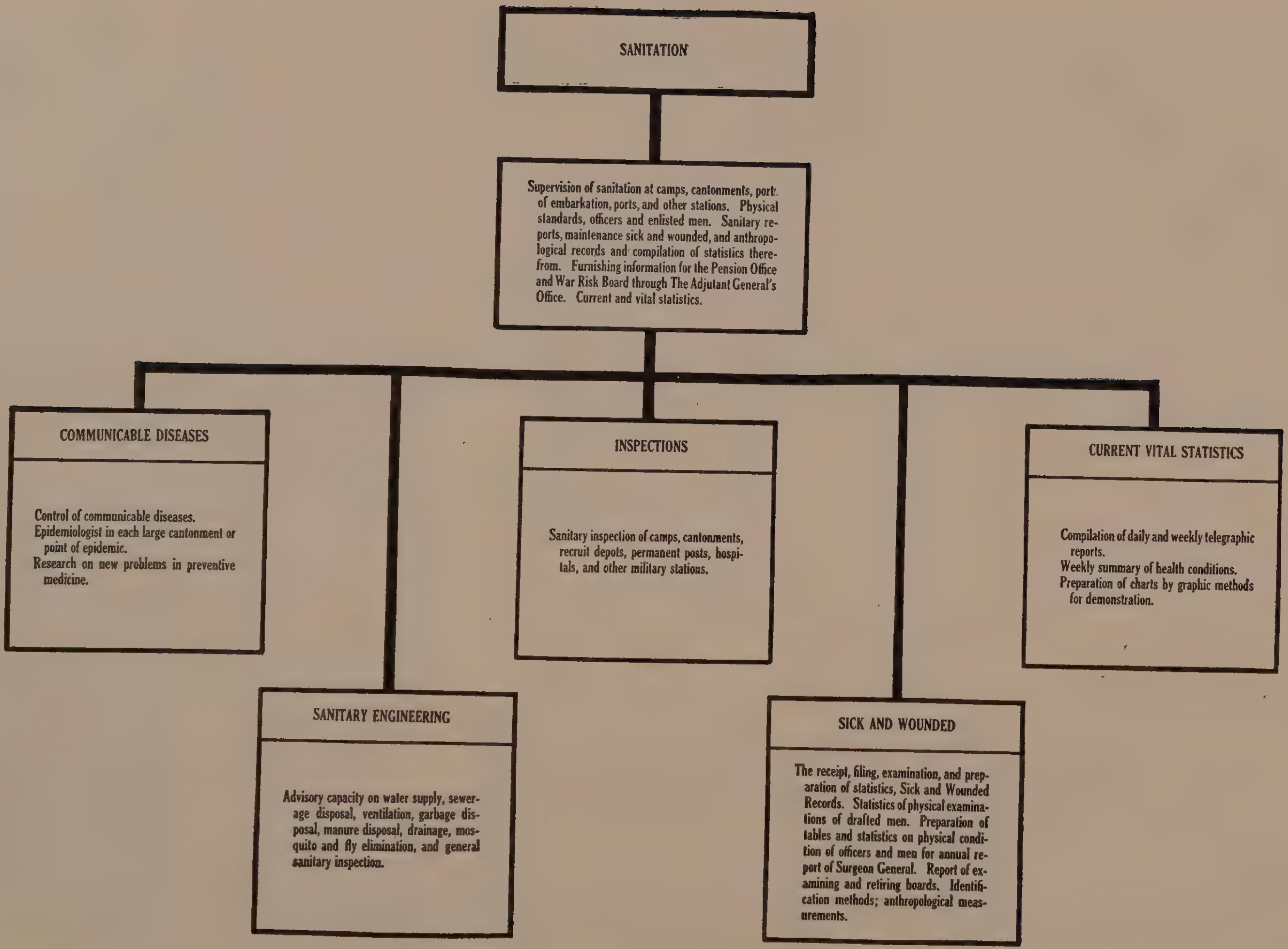
GENERAL ORDERS,
No. 308.

The Medical Inspector General has, under the direction of the Surgeon General, the supervision of all that relates to the sanitary condition of the Army, whether in transports, quarters, or camps; the hygiene, police, discipline, and efficiency of field and general hospitals; and the assignment of duties to Medical Inspectors.

Medical Inspectors are charged with the duties of inspecting the sanitary condition of transports, quarters, and camps, of field and general hospitals, and will report to the Medical Inspector General all circumstances relating to the sanitary condition and wants of troops and of hospitals, and to the skill, efficiency, and conduct of the officers and attendants connected with the Medical Department. They are required to see that all regulations for protecting the health of troops and for the careful treatment of and attendance upon the sick and wounded are duly observed.

They will carefully examine into the quantity, quality, and condition of medical and hospital supplies, the correctness of all medical, sanitary, statistical, military, and property records and accounts pertaining to the Medical Department, and the punctuality with which reports and returns required by Regulations, have been forwarded to the Surgeon General.

They will ascertain the amount of disease and mortality among the troops, inquire into the causes, and the steps that may have been taken for its prevention or mitigation, indicating verbally or in writing to the medical officers, such additional measures or precautions as may be requisite. When sanitary reforms, requiring the sanction and cooperation of military authority, are urgently demanded, they will report at once in writing to the officer commanding Corps, Department, or Division, the circumstances and necessities of the case, and the measures considered advisable for their relief, forwarding a duplicate of such reports to the Medical Inspector General.



SANITATION

Supervision of sanitation at camps, cantonments, ports of embarkation, ports, and other stations. Physical standards, officers and enlisted men. Sanitary reports, maintenance sick and wounded, and anthropological records and compilation of statistics therefrom. Furnishing information for the Pension Office and War Risk Board through The Adjutant General's Office. Current and vital statistics.

COMMUNICABLE DISEASES

Control of communicable diseases.
Epidemiologist in each large cantonment or point of epidemic.
Research on new problems in preventive medicine.

SANITARY ENGINEERING

Advisory capacity on water supply, sewerage disposal, ventilation, garbage disposal, manure disposal, drainage, mosquito and fly elimination, and general sanitary inspection.

INSPECTIONS

Sanitary inspection of camps, cantonments, recruit depots, permanent posts, hospitals, and other military stations.

SICK AND WOUNDED

The receipt, filing, examination, and preparation of statistics, Sick and Wounded Records. Statistics of physical examinations of drafted men. Preparation of tables and statistics on physical condition of officers and men for annual report of Surgeon General. Report of examining and retiring boards. Identification methods; anthropological measurements.

CURRENT VITAL STATISTICS

Compilation of daily and weekly telegraphic reports.
Weekly summary of health conditions.
Preparation of charts by graphic methods for demonstration.

CHART VIII.—Division of Sanitation, Surgeon General's Office, June, 1918.

They will instruct and direct the medical officers in charge as to the proper measures to be adopted for the correction of errors and abuses, and in all cases of conflict of views, authority, or instructions with those of Medical Directors will report the circumstances fully and promptly to the Medical Inspector General for the Surgeon General's orders.

Upon or near the beginning of each month, Medical Inspectors will make minute and thorough inspections of hospitals, barracks, camps, transports, etc., within the districts to which they are assigned, in comformity with these instructions and the forms for inspection reports furnished them.

Monthly inspection reports, in addition to remarks under the several heads, will also convey the fullest information in regard to the medical and surgical treatment adopted; the advantages or disadvantages of location, construction, general arrangement, and administration of hospitals, camps, and barracks; the necessity for improvement, alteration, or repair, with such recommendations as will most certainly conduce to the health and comfort of the troops, and the proper care and treatment of the sick and wounded. When alterations, improvements, or repairs requiring the action of Heads of Bureaus are considered essential, special reports, accompanied by plans and approximate estimates of quantities or cost, will be made.

Medical Inspectors will make themselves fully conversant with the regulations of the Subsistence Department in all that relates to issues to hospitals, whether general, field, division, or regimental, and will satisfy themselves, by rigid examination of accounts and expenditures, that the fund accruing from retained rations is judiciously applied and not diverted from its proper purposes through the ignorance or inattention of medical officers, giving such information and instruction on this subject as may be required. They will also give close attention to the supervision of cooking by the medical officers, whose duty it is, under the act of Congress of March 3, 1863, and General Orders, No. 247, of 1863, to "submit his suggestions for improving the cooking, in writing, to the commanding officer," and to accompany him in frequent inspections of the kitchens and messes.

They will exercise sound discrimination in reporting "an officer of the Medical Corps as disqualified, by age or otherwise, for promotion to a higher grade, or unfitted for the performance of his professional duties," and be prepared to submit evidence of its correctness to the Medical Board by whom the charge will be investigated.

Medical Inspectors are also charged with the duty of designating, to the surgeon in charge of general hospitals and convalescent camps, all soldiers who are in their opinion fit subjects for discharge on surgeon's certificate of disability, or sufficiently recovered to be able for duty. In all such cases they will direct the surgeon to discharge from the service, in accordance with existing orders and regulations, or return to duty those so designated.

* * * * * * *

It is expected that all commanding officers will afford every facility to Medical Inspectors in the execution of their important duties, giving such orders as may be necessary to carry into effect their suggestions and recommendations; and it is enjoined upon all medical officers, and others connected with the Medical Department of the United States Army, to yield prompt compliance with the instructions they may receive from Medical Inspectors on duty in the Army, Department, or District in which they are serving, on all matters relating to the sanitary condition of the troops, and of the hygiene, police, discipline, and efficiency of hospitals.

By order of the Secretary of War:

E. D. Townsend,
Assistant Adjutant General.

With the end of the Civil War Medical Department inspectors disappeared, not to reappear in the Spanish-American War or until 1913. (A medical inspector was appointed in the latter part of 1898 and made at least one report of inspections to the Surgeon General, which covered both sanitary conditions and medical department operations, but this officer was then detailed as chief surgeon, Division of the Philippines, and ceased to act as an inspector).

The duties of the sanitary inspector of a department are defined in the Manual for the Medical Department (1913) as follows:

(*a*) To serve as assistant to the department surgeon and to assume the duties of that officer when the latter is absent.

(*b*) To have charge, under the direction of the department surgeon, of all matters relating to the sanitary care of troops.

(*c*) To scrutinize the sanitary reports rendered by medical officers conformably to Army Regulations.

(*d*) To recommend the issue, at proper times, of orders containing specific instructions regarding hygienic and sanitary matters.

(*e*) To proceed, when authorized, to points threatened by seriously insanitary conditions for the purpose of studying such conditions and of recommending and supervising measures for their correction.

(*f*) To make himself thoroughly familiar with the sanitary conditions at and near each point within the jurisdiction of the department commander where troops are stationed.

(*g*) To make himself thoroughly familiar with the amount and character of field equipment and supplies pertaining to the sanitary service at each post in the department, and to assist the department surgeon in formulating such plans for mobilization as will result in the sanitary troops arriving at their concentration camps equipped as prescribed in regulations.

(*h*) To make annual inspections at such garrisoned stations as the department commander shall designate.

It should be noted that this was the first time in peace since 1818 that we had had any sanitary inspection service. Sanitary inspections from 1913 operated at department headquarters and not from a central office, that of the Surgeon General.

Though there was no change in the new status of the sanitary inspectors from this time until the World War, actual shortage of mileage funds operated year by year, and sometimes wholly, to prevent them from making extended sanitary inspection of the departments to which they were assigned. Occasional visits were made to permanent military posts by the Surgeon General or by one or another of the department surgeons. Occasionally, too, a specially selected medical officer was sent to a particular station to investigate and report on some medical matter. Neither of these nebulous plans constituted anything remotely resembling a sanitary inspection service. Progress in the way of organization, however, should be noted as having taken place, for the sanitary inspector was provided for in the organization tables of 1913.

With the mobilization of troops on the Mexican border in 1916, seven experienced officers of the regular service were designated by the War Department as "general sanitary inspectors," and were assigned by the commanding general of the Southern Department to the various districts along the border,[12] where, by frequent inspections, supplemented by instruction, they assisted materially in maintaining the forces in excellent health. Their duties at this time were actually almost entirely in the strictly sanitary line rather than having to do largely with medical department administration.

With the beginning of the World War, it immediately became apparent to the Surgeon General's Office that a corps of sanitary inspectors operating from that office was essential for the maintenance of good health conditions among the vast armies which were being raised. Like many other activities at the outbreak of the war, the sanitary inspection service grew up without formal orders, having had its inception early in July, 1917, with the detail to the Division of Field Sanitation of two experienced medical officers.[13] They at once devised the original inspection questionnaire forms and began the inspection of the large cantonment sites where building operations were then beginning. These officers reported for duty on July 18 and August 9, respectively, and remained in the Surgeon General's Office on inspection work until their departure for France on December 27, 1917. On August 21, 1917, the officer, who after December 27, 1917, became chief of this section, was assigned to duty for inspection service.[13] On January 1, 1918, the inspection service was definitely organized as a section of the expanded Division of Sanitation, the same officer remaining at its head until after the end of the war.

An important early administrative accomplishment of the Sanitary Inspection Section was devising an adequate form of questionnaire for obtaining information at the stations inspected and for making report thereof to the Surgeon General. The original questionnaire covered relatively few points, these pertaining strictly to military sanitation. As the work of the section was gradually extended to include not only purely sanitary investigations, but also matters pertaining to other divisions of the Surgeon General's Office, it became necessary to provide a more complicated form of questionnaire. The questionnaire forms were modified from time to time to suit changing conditions and to satisfy the increasing needs of other divisions. At the height of our military activities four forms were in use, one for camps and cantonments, one for base and general hospitals, one for development battalions, and one for Students' Army Training Corps units. The forms of these questionnaires are shown in the chapter on the "Section of Sanitary Inspection" in the volume on Sanitation. For the smaller commands the questionnaire was appropriately modified.

The general method of procedure for sanitary inspectors was as follows: The Chief of the Inspection Section requested of the Personnel Division that orders be issued for a given inspector to proceed to places named for the purpose of making sanitary inspections, and on completion of that duty to return to his proper station. On receipt of information that he was to visit certain stations, the inspector dispatched a standard mimeographed letter to the camp surgeon of the camp or to the commanding officer of the hospital which was to be inspected, requesting him to have ready, in letter form, on the inspector's arrival, certain information indicated in the mimeographed letter. This information covered many of the points which were subsequently to be reported on in the questionnaire, amplifying the subjects discussed therein. On arrival at the station the inspector reported to the commanding officer, visited all parts of the camp or hospitals, and investigated thoroughly all conditions therein, checking his observations against the statements made in the letter to him from the camp surgeon or the commanding officer of the hospital. Before leaving the camp the inspector reported in writing to the commanding general of the camp or to the commanding officer of the hospital the sanitary defects found in the camp and the recommendations for the correction of any of these defects which it appeared that the local commander would be able to remedy without action of higher authorities. In the case of a general hospital the inspector, in the name of the Surgeon General, directed the commanding officer of the hospital to report in writing to the Surgeon General, attention Division of Sanitation, what action had been taken to correct the deficiencies or irregularities noted. In the case of stations other than general hospitals, the recommendations of the inspector, on submission of his report to the Surgeon General, were referred by the Surgeon General to The Adjutant General of the Army, with request that they be transmitted to the commanding general of the camp with instructions that he report regarding the action taken to correct the defects noted by the inspector.

On the basis of his own observations, supplemented by the replies of the camp surgeon or hospital commander to the questions contained in the mimeographed letter referred to above, the inspector prepared his report on the condition of the station, and on returning to Washington submitted the same to the head of the Division of Sanitation for action. The recommendations which the inspector made were then referred to the different administrative divisions of the Surgeon General's Office, or to the proper administrative bureaus of the War Department, with a view to accomplishing the prompt correction of the defects in question. The inspector personally saw to the institution of the necessary corrective measures with regard to important defects. It was found that the latter procedure often resulted in obtaining much more rapid corrective action than would have been possible by routine military correspondence.

At the outset, in the summer and fall of 1917, sanitary inspections were chiefly confined to National Army and National Guard camps.[14] As the great base hospitals at the camps took shape, these were also included in the camp inspections, a special hospital questionnaire being at this time devised for use at these institutions. As the war progressed it so happened that more and more commands, directly under the control of the War Department, were either established de novo or were developed by the expansion of previously existing military agencies. Such were the aviation fields, the arsenals, the ordnance proving grounds, the special camps, the recruit depots, the disciplinary barracks, the prison camps, the Students' Army Training Corps units, and the general hospitals. The Inspection Section undertook the inspection of all these stations as rapidly as they were organized.[14] It was planned that the Inspection Section should visit about once every two months all commands which were directly under the jurisdiction of the War Department and that in addition special or more frequent inspections should be undertaken when complaints, epidemics, or other unusual events rendered them expedient. Owing to the difficulty in obtaining a sufficient corps of experienced regular officers for the Inspection Section it was impossible to make routine inspections of these stations as frequently as was desirable or as was originally contemplated. Usually three and sometimes four months intervened between inspections of important stations, and often a longer period in the case of smaller commands. It should be made clear at this point that the sanitary inspection service of the Surgeon General's Office was extended only to commands directly under the War Department. The territorial departments, as a matter of fact, were maintained during the war,[15] and within them, as in peace times, a sanitary inspector operated, though shortage of mileage funds did not obtain during hostilities; his activities, therefore, were not restricted from this cause.[15]

With the development of the great base hospitals of 1,000 to 2,000 beds, and with the establishment of many large general hospitals for the specialized care of the overseas cases, a new problem was introduced into the inspection situation so far as the Surgeon General's Office was concerned. Each professional division in that office, as well as many of the technical sections of these divisions, wished to have inspectors for investigating exclusively the handling of its particular line of professional work in these hospitals, with a view to standardizing procedures and detecting deficiencies. Yet it was apparent that the practice of making independent inspection for every specialty of medicine was bound to result in duplication of travel, effort, and expense, in a lack of centralized knowledge regarding conditions at these hospitals, and in confusion due to diverse recommendations by different inspectors who were inclined to view a hospital chiefly in the light of their own specialties. To obviate this difficulty it was decided that all inspection work should be centralized in the Inspection Section, and this policy was put into force.[16]

This centralization of professional and technical inspections of hospitals, as distinguished from general sanitary inspections, continued in force for a time, but the desire for independent inspection by each professional division or section in the Surgeon General's Office remained, and ultimately resulted in the appointment of "consultants," who visited the hospitals officially to consult regarding the cases pertaining to their specialties; in reality they acted as inspectors of their respective services. (See histories of Professional Divisions.) The consultants were not under the control of the Inspection Section. The inspectors of this section, however, continued to inspect the professional services at all hospitals, but this inspection was less detailed and technical than that made by the consultants.

The Inspection Section enabled the Surgeon General to keep in close touch with conditions at all camps and hospitals, not only by means of the written reports furnished him, but also by conversations between him and the inspectors. The inspectors on their return to Washington were in a position to answer by first-hand information any complaints regarding sanitary conditions or care of patients at the points visited by them. All the inspectors were stationed in Washington, with the exception of the inspector assigned to duty at San Antonio, Tex., who inspected stations in southern California, Arizona, New Mexico, Texas, Oklahoma, and Louisiana. He was from time to time ordered to Washington for conference and consultation regarding conditions in his inspection area.

The scope of the sanitary inspections as carried on from the Surgeon General's Office differed materially from that of the Inspector General's Department. With the former, less stress was laid on details of a purely military nature, while much more stress was laid on matters largely professional or technical, such as general camp sanitation; general administration of hospitals, hospital trains, and hospital ships; nursing and professional care of the sick; competency of medical officers; the handling of infectious diseases; the prevention of venereal disease; the management of quarantine and detention camps; extra-cantonment health activities; medical supplies; hospital construction; laboratories; special diets; the instruction of medical personnel; mosquito and fly eradication; delousing plants; water purification; sewage disposal; physical examinations for entry into the service and for demobilization; development battalions; and convalescent centers.

More than 1,400 inspections were made by inspectors from this section, and practically every station not under control of a department commander was visited. All large camps and hospitals were inspected many times.[17]

The inspections resulted in the alleviation of numberless local sanitary defects and paved the way for general recommendations looking toward the improvement of sanitary conditions in the Army as a whole.

SECTION OF MEDICAL RECORDS.

The first report of the Surgeon General of the Army to the Secretary of War was made in the year 1819. From that year until the present time at least one report has been made to the Secretary each year. During the early period the report was submitted quarterly. The first statistical report of any consequence, published in 1840, covered the period from January, 1818, to January, 1839. After this time statistical tables were included in the annual reports to the Secretary of War. A second special statistical volume was published in the year 1856, covering the period from 1839 to 1855. Such statistics as were prepared during these early years were consolidations of quarterly numerical reports submitted by the various surgeons of the military posts and other commands.

During the Civil War, beginning with 1861, the regulations prescribed that the senior medical officer of each hospital, post, regiment, or detachment should make a monthly report to the medical director and a quarterly report to the Surgeon General, showing the number of sick and wounded and the number of deaths and of discharges on surgeon's certificate of disability. The medical director by whom the monthly reports were received was required to consolidate them and to forward the consolidated returns to the Surgeon General. From January 1, 1884, when a change was made from numerical to nominal reports, until December 31, 1904, nominal lists of all cases of sickness, deaths, and discharges occurring at military posts were forwarded to the Office of the Surgeon General by the responsible medical officer.

It was in 1883 that the first modern statistical tables for the service were published in an annual report. As time has gone on the data contained in these tables have been continued and amplified, and for many years have formed a vast and exceedingly valuable collection of health statistics applying to many diverse conditions of climate, habitation, race, and service. They are available for the use of the medical profession in the annual reports of the Surgeon General of the Army.

At the outbreak of the World War a method of reporting each case of sickness, death, or discharge on an individual report card was in vogue, having been inaugurated on January 1, 1905. From the time that this system was adopted until the fall of 1917, the cards were filed by posts in the Surgeon General's Office as received, with a nominal check list and a report sheet in each case. This was done each month, vertical filing boxes being used. In common with that of the rest of the Surgeon General's Office, the correspondence of this section was indexed in a correspondence book and filed in vertical files. Later the individual report cards, after being numbered according to a table of diagnostic terms, were sorted and counted by hand. The results were then entered in the designated places on sheets that had been prepared for the purpose. From these data statistical tables for the annual reports of the Surgeon General were compiled.

From what has been said it is apparent that the compilation of medical records had long been an important function of the Office of the Surgeon General. Before the World War the Record Section, as a matter of fact, constituted a good part of the Division of Sanitation. Yet upon our entry into the war, it became evident at once that an enormous expansion would be necessary. As an indication of the increase of its work, it may be well to point out immediately that while before the war the personnel of this section was 1 officer (part time) and 14 clerks, at the height of its activities during the war, 6 officers and approximately 350 clerks were needed.[11]

After it was decided that the United States was to put a large armed force in the field, it became obvious that the old system of handling the sick and wounded records would be inadequate. The filing system for all correspondence was at once changed from a vertical system to a flat-filing system with self-evident indices. (See Administrative Division.) This system, so far as this section is concerned, consisted, in brief, of filing all correspondence by posts and organizations under the name of the respective post or organization. The nominal check lists and numerical reports were separated from the report cards and filed in a flat-filing system by posts or commands. The cards themselves were arranged in one general alphabetical file. It was clearly evident that this was necessary on account of the frequent changes of soldiers from one command to another, as well as from one country to another, conditions which did not obtain to any great extent in peace times.

The Hollerith tabulating machines were adopted and a coding book was prepared. In the preparation of the statistical material free use was made of the system employed by the Bureau of Medicine and Surgery of the Navy Department, as well as of the system which had been instituted in the Office of the Surgeon General of the Army. Each professional division or section of the latter submitted a list of the diagnostic terms which were preferred for its specialty. These were then arranged in one alphabetical file.

Whereas the Navy and the French were using one statistical card for both medical and traumatic cases, it was decided to use one card for medical cases and one for traumatic cases. In this way it was possible to obtain much more detail.

It soon become apparent that if the statistical part of our medical history of the war was to be complete, some data must be obtained showing the physical condition of the men upon their entrance into the military service. Consequently, negotiations were opened with the office of the Provost Marshal General, through whose assistance it was possible to obtain from the local examining boards a copy of the physical examination record, Form P. M. G. O., for each registrant who was rejected by the local boards as physically disqualified. The Provost Marshal General joined with the Surgeon General in a letter to The Adjutant General of the Army requesting that the physical examination forms for the men who were inducted into the military service, and who had been examined at camps, be temporarily loaned to the Surgeon General's Office for the purpose of preparing statistical cards. This request was approved.[18]

Subsequently, approximately 2,000,000 statistical cards for men who had been inducted, and who had been examined at military camps, were prepared. In addition to this number, 549,099 reports of physical examinations were received in the case of men who were rejected by the local board; statistical cards were also prepared for these cases. From this great number of cards, supplemented in many cases by the information obtainable from the sick and wounded cards, it was possible to secure a more complete survey regarding the physical condition of men of military age than has ever before been practicable in this country.

In addition to the 2,500,000 cards which were prepared to show the results of the physical examinations, approximately 3,500,000 cards were made from the reports of sick and wounded for the years 1917 and 1918. Furthermore, about 300,000 additional cards were made, based on casualty cablegrams.

In compliance with a request from the Office of the Chief of Staff that the Surgeon General's Office furnish weekly reports showing the casualties occurring by weeks in the various branches of the service in France, such a plan was put into effect during the latter part of the summer of 1918 and continued until February 1, 1919.[19] On the latter date, the weekly report by branches of the service was discontinued and a weekly report substituted, showing the consolidated figures. This was the only office in the War Department where figures showing the loss by arms of service and by weeks were available and the only place in which there existed the necessary organization and machinery to furnish them.

It was anticipated in the spring of 1918 that it would be desirable to have early information relative to men invalided home from Europe. Consequently a letter was prepared and sent through The Adjutant General to the ports and to various military posts and commands.[20] This letter directed that the field medical cards, or the report cards (Form 52, M. D.), whichever might be sent with cases invalided to the United States, be stamped with the name of the debarkation hospital receiving the patients and the date; and that from the debarkation hospital each card be sent to the hospital in the interior to which the patient was transferred; and that on arrival at this receiving hospital the name of the hospital and the date be stamped on each such card and the card forwarded to the Surgeon General's Office as promptly as possible. From the cards received an alphabetical index was prepared. For a number of weeks this index was the only source of information available in Washington regarding the whereabouts of the patients in question. Of course many purposes were served by this index, mainly in the way of answering inquiries; it was also found of value by The Adjutant General's Office for directing mail addressed to soldiers who had already been invalided home from Europe.

The report cards received by this section rendered it possible to answer thousands of inquiries from relatives and friends in regard to details of sickness and deaths. It was possible also in a large number of cases to furnish information to the Pension Bureau and to the Bureau of War Risk Insurance.

The statistical data collected by this section may be found in the statistical tables, Part Two, Volume XV, Statistics, and in annual reports of the Surgeon General.

SUBSECTION OF ANTHROPOLOGY.

A subsection of Anthropology in the Section of Medical Records was created.[21] Its function was to secure the highest possible degree of perfection in the measurement of recruits and in the preparation of the identification records, and to provide for the analysis and synthesis of statistics on the subject of anthropology. The results of this work are published in Part One, Volume XV, of this history.

SECTION OF CURRENT STATISTICS.

With the outbreak of war and the mobilization of vast armies it became necessary that the Surgeon General be kept currently informed as to the amount of sickness among troops, in order that he might have at all times an up-to-date measure of the practical effect of efforts to combat epidemics. Of course the true index of success or failure of sanitary measures is the number of soldiers on sick report. In other words, as compared with the total strength the success or failure of the Medical Department in its efforts to promote healthful living conditions among troops is indicated by the relative incidence of disease among troops. It was necessary, then, that the Division of Sanitation be kept posted in this respect through current information on the health conditions among troops everywhere. Monthly sanitary reports and reports of inspectors were too infrequent to serve this purpose. To solve the problem department surgeons and the senior medical officer of each divisional camp and cantonment were instructed on September 19, 1917,[22] to forward by telegraph, in code, on Friday night of each week, a report regarding the numbers admitted to hospital and quarters for diseases and injuries, the number of new cases of certain communicable diseases appearing during the week, and the number remaining sick at the end of the week. In addition, the strength of the command and the detailed causes of all deaths during the week were to be included in the report. The form of the weekly report as rendered and as it appeared when transcribed in this office for record is as follows:

Form 86.
Medical Department, U. S. A.
Authorized June 5, 1917.

Telegram dated November 9, 1917.

Weekly report of sick and injured in Camp Sevier, Greenville, S. C., for week ending November 9, 1911.

[(A) Mean strength: Officers and men, 23,264.]

Cases of sickness.	Total.					Pneumonia.	Dysentery.	Malaria.	Venereal.	Paratyphoid.	Typhoid.	Measles.	Cerebrospinal meningitis.	Scarlet fever.	All other diseases.
	Hospital.	Quarters.	Total.	Disease.	Injury.										
(B) Remaining from last week	462	129	691	512	79	9	....	8	148	....	....	114	2	....	241
(C) Admitted this week	247	186	433	347	86	7	....	9	162	....	....	119	1	....	49
(D) Total treated this week	709	315	1,024	859	165	16	....	17	310	....	....	333	3	....	290
(E) Died	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
(F) Transferred to home station, etc	....	....	8	....	....	....	....	....	....	....	....	....	....	....	....
(G) Otherwise disposed of	....	....	578	....	....	....	....	....	....	....	....	....	....	....	....
(H) Remaining sick end of week	294	142	436	349	87	8	....	9	168	....	....	124	2	....	38

Causes of death		
	Pneumonia, lobar	1
	Cerebrospinal meningitis	1

Per cent sick................
Per cent sick last week.....
Total cases transfererd.....
Total deaths...............
From disease...............
From injury................
C–10.

The telegram for the above would read: "A twenty three two sixty four B hospital four sixty two quarters one twenty nine injuries seventy nine pneumonia nine malaria eight venereal one forty eight measles one fourteen meningitis two others two forty one C hospital two forty seven quarters one eighty six injuries eighty six pneumonia seven malaria nine venereal one sixty two measles one nineteen meningitis one others forty nine died pneumonia one meningitis one F eight G five seventy eight H hospital two ninety four quarters one forty two injuries eighty seven pneumonia eight malaria nine venereal one sixty eight measles one twenty four meningitis two others thirty eight."

After first report is rendered it will not be necessary to report under B.

Send promptly by night letter *Friday night* of each week.

The current statistics service was initiated at the beginning of the war in the Division of Field Sanitation, but its functions were greatly amplified in January, 1918, when weekly and sometimes daily telegraphic reports were called for from all general hospitals, ports of embarkation, and independent stations, in addition to those from department surgeons and from the camps and cantonments which, as has been explained, were previously required. Weekly cabled reports were likewise received from the chief surgeon, American Expeditionary Forces, France and Siberia. In the reorganization of the Division of Sanitation the current statistics branch became a separate section,[23] and continued so to function during the remainder of the war.

This section compiled statistics from the weekly telegraphic reports as soon as they were received. Daily reports were used for the same purpose during the influenza epidemic. From these data the Surgeon General was able to see at a glance the morbidity and mortality rates of the previous week for each home command and for the home Army as a whole. Naturally, too, these current statistics enabled him to take very prompt action to better health conditions.

During the period of mobilization of the National Army these current statistics were the best available source of information on the health of the Army. Later during the measles-meningitis epidemic of November, 1917, and the influenza-pneumonia pandemic of September and October, 1918, the Section of Current Statistics furnished the only up-to-the-minute information relative to the progress or abatement of disease conditions in the camps. At these times this information was vitally necessary to the Surgeon General's Office in order to determine at what points help was most urgently needed for checking the ravages of the epidemics; to what place, and at what time, it would be safe to move healthy troops; and in what localities a more rigid system of quarantine should be established in order to halt the further spread of contagion.

It should be explained that the statistics compiled by this section were not absolutely accurate. This was due to the fact that it was impossible, in the short time in which the weekly reports were prepared and sent in by the various surgeons, to have them accurate. Some errors were inevitable, due to haste; for example, a common one was dependent on the fact that final diagnosis in a given case sometimes could not be determined promptly. A patient reporting sick might be considered on first examination to have a certain ailment, and it would be so reported, whereas more thorough examination ultimately would show that something entirely different was the trouble. Nor was time available for carefully checking the figures. The statistics of the section were sufficiently accurate, however, to answer their purpose, although they should never be permitted to serve as a source of information on which to base permanent statistics. They actually proved of the greatest value at the time in giving the Division of Sanitation a fairly reliable measure of current health conditions among troops, thereby helping it to meet the various and peculiar health problems which arose from time to time among our forces in home territory. The figures are not useful for any historical purpose and should not be so used.

This section compiled and published during the war period weekly bulletins on Disease Conditions among Troops,[24] which were widely distributed among medical and line officers and to health officers in civil communities. Special quarterly, semiannual, and annual consolidated reports were also prepared and similarly distributed. A summary of health conditions based upon the weekly bulletin was given to the press each week for publication.

In view of the criticisms which were being made relative to conditions at Army camps in November and December, 1917, the Surgeon General, accompanied by several of his advisers, made a personal inspection of a large number of stations where epidemics were then prevailing, and submitted reports to the Chief of Staff from each place visited.[25] The unsatisfactory and insanitary conditions found were fully set forth in these reports, with recommendations for their correction. This series of records gives a complete picture as to conditions found at the places visited; as a matter of fact, similar conditions obtained to a greater or less extent at all camps and cantonments at that time. Overcrowding was found to be general and often extreme. Hospitals were in process of construction and were not prepared to function properly. Medical personnel was new to the service and untrained. Not infrequently the sick were being accommodated in extemporized buildings and tents.

It became evident to the Surgeon General from his observations that the communicability of pneumonia was not being properly appreciated by medical officers, and that cross infections were occurring in hospitals too frequently, due to overcrowding of the sick and failure to take proper precautions for limiting contact. Overcrowding in tents, assembly halls, and barracks was also believed to be responsible to a large extent for the spread of infections at that time. It was recognized, also, that the authorized personnel for each camp surgeon's office was inadequate properly to handle the large medicomilitary problems constantly present in a large camp, especially when extensive epidemics were prevailing, and that there was urgent need for the full-time service of an additional assistant to the camp surgeon and sanitary inspector who should be especially trained in epidemiology, and who, working under the sanitary inspector, could devote his energies exclusively to intensive studies of means for the prevention of communicable diseases.[26]

These conclusions of the Surgeon General led to the establishment on January 1, 1918, of the Section of Communicable Diseases as part of the Division of Sanitation.[27]

SECTION OF COMMUNICABLE DISEASES.

The purpose of this section was to make a more intensive study of infectious diseases and their control from an administrative standpoint and to secure more prompt action on measures of disease prevention, many of which were then most pressing. At that time epidemics of measles, pneumonia, and meningitis were raging extensively in the various camps and cantonments. Special interest attached to the relationship existing between pneumonia and measles which then appeared of primary importance, although at a later date this relationship became less marked. As camp surgeons, sanitary inspectors, and sanitary engineers were selected and directed in their activities by the Division of Sanitation, it was considered only logical and in the interest of efficiency that epidemiologists should be chosen and their activities controlled by the same division.

The Section on Communicable Diseases came into being to meet an emergency. It fulfilled its mission and justified its organization by its effective work in disease prevention during the war period. On November 1, 1918, it was transferred to the Division of Laboratories and Infectious Diseases as a result of the reorganization of the Surgeon General's Office.[28]

With the organization of this section an epidemiologist was assigned at each of the larger commands as an additional assistant to the camp surgeon. The first assignments were to stations where serious epidemics were then prevailing. An outline of what it was intended that epidemiologists should do was promulgated in a memorandum to division surgeons issued under date of January 8, 1918:[29]

1. It is contemplated that an officer of the Medical Department, with special training as an epidemiologist, will be assigned to each camp and cantonment where serious epidemic disease exists. While not an officer of the division, he will be under your jurisdiction in your capacity as camp surgeon, acting under the immediate control of the sanitary inspector as his assistant. Where the amount of sickness warrants such action, it is desired that in each brigade a suitable medical officer be selected who will be assigned as whole or part time assistant to the epidemiologist; one of these should be trained as an understudy with a view of having him serve as an assistant to the sanitary inspector in communicable disease problems when the division leaves camp. The epidemiologist should make such reports to you as you deem necessary.

2. It is expected that the epidemiologist will be given free access to the wards of the base hospital and that the commanding officer and staff of the hospital will cooperate with him in every way. The facilities of the laboratory should be at his disposal in so far as the study of epidemics may render this desirable. In the event of serious epidemics prompt request should be made to this office for additional bacteriologists if needed.

3. The epidemiologist should personally, or through one of his assistants, visit the tent or barrack in which each case of infectious disease originates, and observe, as far as possible, everything pertaining to that case from an epidemiological standpoint. He should assure himself that the necessary quarantine measures and the daily inspections for incipient cases are promptly inaugurated and carefully carried out, and that proper disinfection of contaminated articles is practiced. In all these steps he should act through and in cooperation with the regimental commander and regimental surgeon.

4. He should trace the connection, if any, between cases, and observe where the sick man came from, how long he has been in the camp and in the service, where he has been, and what associates he has had, if any, outside his present company.

5. He should investigate the air space per man, the arrangement of beds, the ventilation and the heating in infected barracks, and also the clothing of the soldiers concerned, in so far as these factors pertain to the prevalence of disease.

6. He should give special attention to the adequacy of the prescribed examinations of outgoing and incoming troops for the detection of incipient communicable disease.

7. He should keep spot maps of infectious diseases in the camp. In this connection special attention must be given to the frequent movement of whole organizations from one barrack to another, to the change in personnel within organizations and from one organization to another, and to the constant arrival of new men from outside the camp.

8. Under your supervision he should give to the medical officers of the camp special instructions by lectures and practical demonstrations regarding the most approved methods of handling communicable diseases.

9. The attached extracts indicate the character of detention camps and quarantine camps which will probably be constructed at each cantonment and camp. The epidemiologist should supervise the management of both camps. At the detention camps the following points should especially be emphasized. The camps will consist of huts holding eight men, or tents holding five. These hut or tent units must be kept separate. Drills must be by these units only. In the vaccination, the physical examination, and the issuing of clothing, great care should be taken to

prevent one squad of eight, or group of five, from being in a room at the same time as another squad or group. Messing should be outdoors, or, during inclement weather, in the huts or tents.

10. The following points should receive special attention in view of the prevalence in our camps at present of the diseases named. The particular details to be emphasized in caring for these diseases while in hospitals are covered by memorandum, S. G. O., dated January 1, 1918, and sent to all division surgeons and base hospitals.

(*a*) *Measles.*—This disease should be regarded as one having a high mortality, not directly, but through its complications and sequelæ. Experience has shown that patients sick with measles often carry most virulent pneumococci, influenza bacilli, meningococci, and possibly other dangerous organisms. Patients with measles should be treated with every possible provision for the protection of one patient from another, and of the physicians, nurses, and male attendants from the patients. Convalescent cases should be carefully guarded for a long period in well-warmed quarters.

The period of infectivity lasts as long as the abnormal discharges from the mucous membranes persist. All such discharges should be disinfected.

Contacts should be quarantined in barracks, or preferably in a quarantine camp, and be inspected twice daily by a medical officer. Special attention should be given to detecting Koplik spots, and early rises in temperature up to 100° should be isolated. Daily airing of barracks and sunning of bedding should be practiced in "contact" barracks for measles, and also for all of the below-mentioned infectious diseases.

Closure of assembly halls, exchanges, etc., may be necessary in severe epidemics of measles and other serious infectious diseases.

(*b*) *German measles.*—The same precautions should be taken as for measles. Every effort should be made to correctly diagnose German measles with a view to preventing cross infection with measles.

(*c*) *Pneumonia.*—This disease is to be regarded as communicable. It should be determined in every case whether the disease is primary or secondary to measles or scarlet fever, and records should be classified accordingly. Careful cleansing of the floors should be practiced in a barrack where pneumonia has developed. Special attention should be given to sunning the patients' bedding and clothing. Ample ventilation and the widest possible separation of the heads of adjacent sleepers should be insisted on.

(*d*) *Diphtheria.*—Early culture of suspicious throat conditions seen by regimental surgeons should be insisted on. Contacts with a case of diphtheria should be quarantined until it is shown by both nose and throat cultures that they are not carriers. All close contacts shown by the Shick test to be nonimmune should be promptly immunized by means of antitoxin. Articles which have been in contact with the patient and articles soiled by discharges should be disinfected.

(*e*) *Mumps.*—Cases should be isolated and special care taken to detect incipient cases. No quarantine is recommended, but immediate contacts may be segregated if deemed necessary.

(*f*) *Scarlet fever.*—Contacts should be quarantined for seven days and examined twice daily by a medical officer, particular attention being directed to the throat. All articles which have been in contact with the patient in barracks or tent, or with his discharges, should be disinfected.

(*g*) *Smallpox.*—The virus is believed to be present in all body discharges, including the feces and urine. It may be carried by flies. It probably persists till all crusts have disappeared. Prompt and widespread revaccination of contacts, including at least the entire company, should be practiced. Quarantine of contacts is unnecessary, except in case of new troops when there is doubt as regards successful original vaccination, but all contacts should be inspected twice daily for a period of two weeks, special attention being given to the mouth and to rises of temperature.

(*h*) *Cerebrospinal meningitis.*—For purposes of carrier examinations to be made after the occurence of a case of epidemic cerebrospinal meningitis, the word "group" should be taken to mean—

First. Other members of the same squad or tent.

Second. All other men in the same room.

Third. All other men in the same building or company.

In other words, the examinations should be extended in increasing circles about a case as rapidly as time and laboratory facilities permit. While such examinations are being made on the smaller group, the largest group should be treated as potential carriers. All men in the largest group should be quarantined and prevented from mingling, as individuals, with others within or without the camp; they may, however, be permitted to attend drills and other formations as a unit. In the meantime, sprays and gargles may be used. Whenever it is impracticable to culture the larger units at once, the inauguration of spraying need not be delayed. If spraying is employed it should be timed so that it falls as closely as possible to the hour of retiring, thereby diminishing the chance for droplet infection during the night. When practicable a second culturing of the largest group is advisable, this to be carried out after the removal of any contacts found at the primary culture.

All carriers, as rapidly as detected, are to be removed from the building and isolated in a quarantine camp until free from meningococci on three consecutive examinations, with intervals of from three to six days between examinations. On completion of the examinations, and removal of the carriers, the quarantine may be raised.

11. From time to time the epidemiologist may report to this office, through the division surgeon, such observations as are of interest in regard to the prevention and spread of communicable diseases. Among the points of particular interest to this office may be mentioned the following:

(*a*) Relationship between bronchitis and pneumonia, measles and pneumonia, and septic sore throat and pneumonia.

(*b*) Influence of exposure to cold on incidence of pneumonia, especially during convalescence from measles.

(*c*) Influence of length of convalescence in measles on subsequent incidence of pneumonia.

(*d*) The best methods of limiting the spread of pneumonia in camps.

(*e*) Is the raw recruit specially susceptible to meningitis and pneumonia; and, if so, why?

(*f*) Influence, if any, of gas masks, on spread of infectious diseases.

(*g*) Influence of housing conditions, on incidence of measles, pneumonia, and meningitis.

(*k*) Influence of rural and urban residence on development of measles, pneumonia, and meningitis.

(*i*) To what extent is epidemic disease due to transfer of troops from one camp to another.

(*j*) Recommendations which may be of use in preventing the development and spread of communicable diseases among men in future assemblies of troops.

12. The above instructions in no wise relieve the division surgeon from the responsibility of prescribing such other measures as in his opinion are necessary to limit the development and spread of communicable diseases.

The epidemiologists had no official status in the Tables of Organization, but, as already explained, they served as additional officers on the staffs of camp surgeons, specializing along definite lines and making effective their recommendations through the authority of the sanitary inspector. The smaller camps were not supplied with epidemiologists as the sanitary inspector was able to perform all the duties of his position without assistance. As epidemics subsided in one camp, the trained epidemiologist was available for transfer and was sometimes sent to another camp where there was special need for his services. In effect, the epidemiologist during the war took over a part of the functions laid down in Army Regulations for the sanitary inspector.[30] This permitted more intensive study and better handling of epidemiologic problems than was possible when the sanitary inspector was unassisted in his work. In September, 1918, the War Department formally authorized the assignment of an additional officer to each of the larger camps as epidemiological assistant to the camp surgeon.[31]

In the fall of 1918, the severe epidemic of influenza, with a succeeding high incidence of pneumonia, claimed first attention of the section. Both before and during the influenza epidemic the section was particularly impressed with the importance of contact and droplet infections in the spreading of sputum-borne diseases and with the necessity of treating pneumonia as in infectious disease. The Division of Sanitation took steps to prevent overcrowding in barracks and tents, and to minimize in the hospitals the danger of droplet infection by requiring the use of cubicles for the patients and masks and gowns for the attendants.[29] Later the importance of careful dishwashing in the prevention of respiratory disease received particular attention.[32]

The Medical Department early came to the conclusion that for the control of communicable diseases, it was essential that incoming drafted men should be received in detention camps and kept in small groups during the first two weeks of their service, instead of being domiciled in barracks accommodating several score of individuals in a single room. No such detention camps were provided in the original plan of the cantonments, but these, and also quarantine camps, were improvised at several stations. Ultimately, authority was obtained from the War Department to construct permanent detention and quarantine camps, consisting of frame huts each of which would hold eight men with an allowance of 50 square feet of floor space per man. These detention and quarantine camps were nearing completion when the signing of the armistice put a stop to this work. No actual experience with them can therefore be recorded.

SECTION OF SANITARY ENGINEERING.

The organization of the Sanitary Corps (q. v.) in June, 1917, was a matter of basic importance to the Section of Sanitary Engineering, which derived its personnel from this corps. The Sanitary Corps comprised officers who were not graduates in medicine but who possessed certain other technical qualifications which made them of special value to the Medical Department. Sanitary engineering, which was but one of the many professions represented in the Sanitary Corps, is the only one of interest in the present connection. On August 13, 1917, a sanitary engineer was appointed in the Sanitary Corps and assigned to duty in the Division of Field Sanitation as technical adviser on problems pertaining to sanitary engineering.[33] On January 1, 1918, a Section of Sanitary Engineering was established in the expanded Division of Sanitation.[34]

The sanitary engineers on duty in the Division of Sanitation acted as advisers and consultants on various matters concerned with the physical sanitation of military stations. Among the features to which their attention was especially directed were the following: Water supply and water purification; sewerage, sewage treatment and disposal; the collection and disposal of garbage, manure, and other camp wastes; drainage and mosquito-control operations; the control of flies and fly breeding; housing and ventilation. These sanitary engineering officers represented the Surgeon General's Office in conference on these and similar problems with the Construction Division and with other bureaus of the War Department. To them were referred for action or comment all papers passing through the Office of the Surgeon General which related especially to engineering or to problems of physical sanitation. Such papers comprised routine monthly sanitary reports of camp and post surgeons; reports of camp sanitary inspectors and camp sanitary engineers; special reports of medical and engineering inspectors; various technical papers prepared for publication; reports and papers dealing with laboratory procedure in relation to the examination of water, sewage, etc.; and miscellaneous letters of complaint in regard to matters pertaining to sanitary engineering.

Many field inspections and office studies were made by the sanitary engineers. For the most part such inspections dealt with problems of water supply, sewage treatment, and drainage for the purpose of mosquito control. The officers making these inspections were attached to the Section of Sanitary Inspection for the time being.

Concerned in the work of the section were Sanitary Corps officers who had had special training and experience in sanitary engineering and public-health administration in civil life, and an enlisted force composed of men with qualifications which fitted them to assist the officers in their work. Broadly stated, the service to which these officers and men were assigned was of three general types, as follows: Duty within the Surgeon General's Office as members of the Section of Sanitary Engineering in the Division of Sanitation; duty at camps, cantonments, ports, posts, arsenals, and other military stations in the United States where special sanitary engineering problems in connection with sanitation arose; and duty overseas for special details, or with water-supply companies with divisional or other sanitary squads, and with water-tank trains.

The total number of sanitary engineering officers commissioned in the Sanitary Corps was 181.[35] Of this group 59 were assigned to duty overseas. The distribution of the commissioned personnel with reference to assigned duties is shown below:[36]

Duties.	Number of officers or stations.
Camp or post sanitary engineers (camps, cantonments, ports, posts, aviation fields, etc.)	70 stations.
Camp or post sanitary inspectors	6 stations.
Commanding officers of divisional or other sanitary squads (for duty in the A. E. F.)	36 officers.
Special duty with A. E. F. (officers requested by cable)	13 officers.
Water-tank train officers (A. E. F.)	8 officers.
Engineering water-supply regiment Sanitary Corps officers	2 officers.
Commanding officers of sanitary detachments for duty in the United States (chiefly mosquito work)	19 detachments.
Special mosquito-control work	14 officers.
Drainage survey parties	3 officers.
On duty in Surgeon General's Office (maximum force at any one time, 5 officers)	12 officers.

No complete record is available with respect to the enlisted personnel assigned to duty in the engineering service. Enlisted men specially qualified in chemistry, bacteriology, and sanitary engineering were assigned to various camps and posts in the United States to assist in operating water and sewage-treatment plants, to perform laboratory work, to make engineering surveys, and to act as noncommissioned officers in Sanitary Corps detachments. Other men qualified particularly in laboratory technique were assigned to special duty overseas, mainly for water-supply control work.

It should be pointed out that the officers and enlisted men of the sanitary engineering service were selected with great care, the training and experience which they possessed and the duties which they would be required to perform being held in view. A high standard was maintained for appointment in this service. Approximately 2,000 applications were reviewed in selecting a group, containing not over 250 officers and men.[37]

Immediately on being commissioned over half of the sanitary engineering officers were assigned to the Medical Officers' Training Camp, Camp Greenleaf, Chickamauga Park, Ga. Prior to March, 1918, their instructional work was given in the School of Applied Hygiene and Sanitation intended primarily for medical officers, in order to equip them for the duties of sanitary inspection. In March a School of Sanitary Engineering[38] was organized within the School of

Applied Hygiene and Sanitation, and later, in May, 1918, the two schools became mutually independent. The purpose of the School of Sanitary Engineering was to furnish newly appointed officers with instruction in military forms and methods of procedure, and to focus their general knowledge of engineering and sanitation upon sanitary problems incident to military conditions. This training, usually extending over a period of from four to six weeks, proved markedly advantageous to the service and very beneficial to the officers personally.

This section gradually introduced sanitary engineers into various stations as assistants to camp and post surgeons. The officers assigned to points in the United States served as camp sanitary engineers, as officers commanding detachments of soldier or civilian labor engaged in mosquito and fly control work, as officers in charge of drainage survey parties, and as operators of water and sewage treatment plants. Several officers having special training in public-health work, in addition to their engineering training, were detailed as camp sanitary inspectors. Approximately 20 sanitary detachments, each consisting of from 50 to 200 colored enlisted men of the Sanitary Corps, were developed for mosquito and fly control work in southern stations.[39] In some cities supplying water to camps or large posts, and in certain camps having water-purification and sewage-treatment plants, sanitary engineers of the Sanitary Corps were placed in direct charge of the operation of these utilities.[40] In several instances officers of this section conducted classes for the instruction of medical officers in sanitary engineering problems.

The authority for placing sanitary engineering officers of the Sanitary Corps at military stations, and a preliminary definition of their duties, was contained in a letter from The Adjutant General of the Army to the Surgeon General, under date of July 5, 1918, from which the following is quoted:[41]

> 4. The sanitary engineers grouped under section B, of Table (E. L.) 2 (sanitary engineers for sanitary inspectors of camps and cantonments; inspectors of sewage and garbage disposal and water-purification plants; in charge of drainage and other work for the extermination of mosquitoes, flies, etc.; survey parties) are available for all of the duties to which such officers may be assigned and may be transferred from one of such duties to another as the needs of the service may require.
>
> 5. You are authorized to assign to each camp and cantonment where sewage and garbage disposal plants or water-purification plants have been installed a sanitary engineer whose duty it shall be to inspect such plants and supervise their operation in order that he may advise the quartermaster as to the operation thereof under the varying conditions of flood, drainage, and temperatures.

The status and duties of camp sanitary engineers were still further defined as follows:[42]

> 1. An officer of the Sanitary Corps may be assigned as sanitary engineer to each camp or other large military stations where water-purification or sewage and garbage disposal systems have been installed.
>
> 2. The sanitary engineer is an assistant to the camp surgeon and his duties ordinarily shall be—
>
> (*a*) To inspect and supervise the operation of water supply, or sewage and garbage disposal systems, and to advise the utilities officer and subdepot quartermaster with reference thereto; to recommend such suitable standards of performance of these systems as will properly conserve the interests of health and sanitation in the camp and its environment.
>
> (*b*) To have immediate charge, under the camp surgeon, of drainage, oiling, and other preventive measures for the extermination of mosquitoes and flies.

(c) To act as consultant and adviser to the camp surgeon on all the engineering or structural phases of the camp or station which bear a definite relation to health and sanitation.

(d) To perform such other sanitary duties as may be designated by competent authority.

(e) To render a monthly report to the Surgeon General of the Army, through military channels, covering such subjects as may be prescribed by the Surgeon General of the Army (322.02 A. G. O.).

It should be noted that the Sanitary Corps was not authorized until after the general policies regarding the design and construction of the camps had been adopted, consequently no sanitary engineers belonging to the Medical Department were available at that time. This fact, it is believed, seriously interfered with efficiency.

The nature and extent of the results obtained by the Section of Sanitary Engineering varied in importance with the conditions encountered at each camp or other station. The work accomplished may be set forth under the following general headings:

(a) Assisted in securing both better design and better construction of works for the treatment and distribution of water, for the collection and treatment of sewage, and for the disposal of garbage, refuse, and other camp wastes. The results were obtained during the enlargement and reconstruction which was found necessary at certain camps after the organization of the Sanitary Corps, and at the stations which were originally established after that date.

Investigations were made of camp utilities by the officers of this section and, where necessary, recommendations for their improvement were made. The actual work was carried out, either in whole or in part, by the Construction Division of the War Department. One of the first important difficulties which developed at the camps was in respect to the sewage-disposal plants. These failed to operate properly as originally designed.[43] A thorough study of the first plant constructed in conformity with the general type adopted for all of the camps was made by officers of the engineering section. This installation was at Fort Myer, Va., and as a result of the investigation and a later study of the plant at Camp Meade all septic tanks subsequently constructed were designed on the basis of more than double the capacity provided originally.

Investigations by officers of this section first gave definite information as to the relatively large quantities of grease present in camp sewage, as compared with municipal sewage, and its deleterious effect upon the operation of the sewage-disposal plants. In the light of this information a study was made of the quantity and of the value of the grease in the sewage at Fort Myer, and experiments were conducted on grease removal. The result of this study was partially responsible for the adoption by the Construction Division of a vastly improved type of grease trap at all camps.

Likewise, routine investigations by officers of the sanitary engineering service with respect to methods in use for the collection, handling, and disposal of garbage, manure, and other camp wastes were in part responsible for the abandonment of the expensive incinerators of miscellaneous types which had been adopted at many of the larger camps and for the designing of a new and efficient type of incinerator by the Construction Division, and for many improvements in methods of handling other camp wastes.

(*b*) Assisted in securing better operation of the plants for the treatment and distribution of water, for the collection and treatment of sewage, and for the disposal of garbage, refuse, and other camp wastes.

In July, 1918, the Maintenance and Repair Branch of the Construction Division was established and the operation of camp utilities in general was then taken over by that organization.[44] The operation of camp utilities was closely supervised by officers of the sanitary engineering service, and at many stations a program for their operation was laid out by them. In several other instances the actual operation of the water and sewerage utilities was carried on as a part of the routine duties of the local sanitary engineer officer.

(*c*) Under the general supervision of camp surgeons, sanitary engineer officers usually assumed complete immediate charge of drainage and mosquito control in camps requiring it. A great amount of work of this character was done at the more than 70 military stations where it was found necessary. As a result, malaria was practically eliminated from reservations on which the disease would otherwise have been prevalent, and in many localities where mosquitoes were normally an almost unbearable nuisance it became difficult to collect even single specimens for identification and study.

(*d*) Assisted in putting into operation proper and standardized laboratory procedures, in both base hospital and departmental laboratories, for the examination of water, sewage, milk, and soft drinks. The examinations in question were actually made under the direction of the medical officers in charge of the laboratories.

SECTION OF FOOD AND NUTRITION.

The Secretary of War on October 16, 1917, approved the organization of a Food Division in the office of the Surgeon General.[45] This division was composed of officers and enlisted men from the Sanitary Corps of the Medical Department. The status and functions of this division are given in full in the administrative history of the Division of Food and Nutrition (p. 307).

STUDENTS' ARMY TRAINING CORPS SECTION.

This corps was organized under the authority of the act of Congress, approved May 18, 1917, commonly known as the selective-service act, as amended by the act of August 21, 1918, and under War Department orders [46] of August 24, 1918. The date fixed for the induction of the students was October 1, 1918. Five hundred and sixty units of this corps were organized in various colleges and technical schools throughout the country, with a total enrollment of about 180,000 men.[47] Units varied in size from 50 to 3,200 and were administered by the War Department Committee on Education and Special Training, on which was an officer of the Medical Corps. This medical officer had to do primarily with the educational program at the various medical schools, but apparently it was the original intention of the War Department that he also handle the Medical Department administrative duties pertaining to all the Students' Army Training Corps.[47] The corps was developed very rapidly and without definite information being given to the Office of the Surgeon General as to what was contemplated. In a short time after the courses of instruction were begun the Medical Department activities at the various colleges and schools involved were found to have fallen into a chaotic state and it became apparent that the medical officer on the committee would be unable to handle the administrative side of the question. This was due to the fact that the work pertained to many divisions in the Surgeon General's Office and required some agency on the spot to coordinate it. To solve the difficulties the Acting Surgeon General on October 15, 1918, created a Students' Army Training Corps Section in the Division of Sanitation. Its activities included (*a*) selection and assignment of Medical Department personnel (medical and dental officers, contract surgeons, enlisted men of the Medical Department, and female nurses); (*b*) hospitalization; provision of medical equipment and supplies; (*c*) examination of accounts for professional services rendered; and (*d*) the meeting of the many administrative emergencies which were certain to arise from time to time. Most of these matters were handled by liaison between this section and the various other divisions and sections of the Surgeon General's Office to which they properly pertained.

Physical examination for induction into the Students' Army Training Corps began the latter part of September, 1918. The original plan was to complete this work by October 15, but on account of the epidemic of influenza at this time the period was extended to October 21.[48] These physical examinations were made by medical officers and contract surgeons. At the various colleges and technical schools candidates who were found to be physically qualified were inducted by the local commanding officers, who notified local draft boards of the fact so that they could account for the men accepted.

The problem of obtaining medical attendance for the Students' Army Training Corps was a difficult and pressing one. As it chanced, 196 medical officers were found on duty with training detachments at colleges, and these passed into the Students' Army Training Corps when that corps absorbed the training detachments which had previously existed. This helped out greatly, but on account of the shortage of medical officers in the Army no more could be assigned to the Students' Army Training Corps. Therefore it was necessary to obtain authority from the War Department to employ not to exceed 1,000 contract surgeons for this work.[49] Telegrams were then sent to presidents of the colleges and schools asking for names of local physicians who would accept contracts, and also to deans of leading medical schools requesting the names of prominent graduates living in the vicinities of the training corps units. From the lists secured from these two sources 755 physicians were appointed contract surgeons. Contracts were made for full time or for half time. The former carried a salary of $150 and the latter $75 per month. Medical enlisted personnel was allotted as follows: To colleges and schools under 500 inducted population, none; to those over 500 and under 1,000, one sergeant and two privates; to those over 1,000 and under 2,000, one sergeant first class, five privates; to those over 2,000, one sergeant first class, one sergeant, and six privates.

The contract physicians working alone were of course considerably hampered by their unfamiliarity with medico-military procedures. The work consisted of physical examination of students before induction, medical attendance to all students in the various corps, local sanitary supervision, and usually administrative duties similar to those of a post surgeon. The few available commissioned medical officers were assigned as surgeons to the larger units, where they were assisted by contract surgeons. Yet, although the units were organized during the epidemic of influenza and although the situation at a number of institutions was a difficult one, the medical service in general was efficiently administered in a manner which demonstrated the earnestness, adaptability, and professional ability of the civilian physicians concerned.

One hundred and fifteen dental officers were on duty with training detachments when these detachments became a part of the Students' Army Training Corps.[50] It was planned to assign dentists to all units having over 500 men, but this plan was not carried out on account of the abandonment of the whole enterprise after the signing of the armistice. No contracts with local dentists were made. Students needing emergency dental treatment were sent to a local dentist, if a dental officer was not available, and the account was settled on Form 355, W. D. Surgeons were cautioned to refer to local dentists only cases requiring emergency work, and by emergency work was meant dental treatment necessary for the relief of pain.

In arranging hospital facilities for members of the Students' Army Training Corps, the institutions concerned were classified as follows:[51] Class A, colleges so situated that it was practicable to send members of the Students' Army Training Corps to an Army hospital; class B, colleges which had adequate hospitals or infirmaries of their own and were not accessible to any Army hospital; class C, colleges which had no adequate hospitals or infirmaries of their own and which were not accessible to an Army hospital, but which were accessible to a satisfactory civil hospital; class D, colleges which had no adequate hospitals or infirmaries of their own and which were not near by an Army or a civil hospital.

Colleges in class A were directed to use the military hospital. Those in class B were directed to send patients to their own hospitals and were paid on a per diem-capita basis for hospital treatment rendered. Those in class C were directed to use the near-by civil hospital and the bill was paid in the usual manner on Form 355, W. D. Those in class D, if small (less than 300), were directed to treat cases of minor sickness in quarters and to transfer serious cases to the nearest hospital, either civil or military. Patients too sick to be moved were to be treated in quarters, a special nurse being hired if necessary. It was planned for larger colleges in class D (over 300) to have the school establish a college hospital, if possible, otherwise a military hospital would have been established by the Medical Department. On November 1, 1918, a circular letter [51] was sent to all units requesting a statement of their hospital facilities. Three hundred and two replies were received to the following effect: Class A, 50; class B, 80; class C, 148; class D, 24; no reply, 258. The average rate charged per man per day at class B schools was $2.06. The average rate per man per day at class C schools was $2.05.

Surgeons were directed in a memorandum [52] from this office dated October 22, 1918, to established dispensaries for sick call purposes and for the treatment of mild ambulant cases. They were also directed to purchase locally medicines and dressings required for these dispensaries. No requisitions for medical supplies were honored from units except for those having Army hospital facilities.

The armistice having been signed, the War Department ordered the Students' Army Training Corps demobilized.[53] Their demobilization began December 2 and ended December 21. Surgeons were directed to ship medical property to the nearest Army camp or post.

Retained medical records were disposed of in accordance with the provisions of the Manual for the Medical Department (par. 425). Enlisted men, Medical Department, were reported to department commanders for transfer. Medical officers were likewise reported to department commanders for discharge or transfer. Contracts with contract surgeons were annulled as rapidly as their services could be dispensed with.

MISCELLANEOUS SECTION.

This section was established in July, 1918,[54] to bring together under a common head, for convenience in administration, various special activities having no logical relation with any other section of the Division of Sanitation or to each other. Some of these activities were of long standing in the division, others of recent development. The Miscellaneous Section as then organized comprised five subsections, as follows: (*a*) Personnel; (*b*) Physical Standards and Examinations; (*c*) Vermin Infestation and Disinfestation; (*d*) Correspondence Relating to the Physical Conditions of Individual Officers and Enlisted Men; and (*e*) Development Battalions. In addition, from time to time during the war, the Miscellaneous Section handled other important problems which pertained to none of these subsections.

SUBSECTION OF PERSONNEL.

The Subsection of Personnel was organized early in 1918. Its function was to supply administrative Medical Department personnel for divisions camps, cantonments, ports of embarkation, aviation fields, and other large independent stations. The personnel selected included camp and division surgeons and sanitary inspectors, camp epidemiologists, sanitary engineers, and members of physical examination boards.

To provide a reserve of administrative officers, especially sanitary officers, this section selected men who had had previous training in public-health work and had them ordered to the Medical Officers' Training Camp at Fort Riley, Kans., or to Camp Greenleaf, Fort Oglethorpe, Ga., where schools of applied hygiene and sanitation had been established.[55] After an intensive course of instruction at one of these schools, the officers recommended by the respective commandants of the schools were assigned to one or another of the larger camps for practical instruction under the camp surgeon. After a proper period the section called for a special report on the efficiency and adaptability of each such officer. Based on these reports permanent assignments were made as sanitary inspectors, assistant sanitary inspectors, epidemiologists, and in some cases as division or camp surgeons.

In order to undertsand just what was done in the way of securing qualified officers for the more important medical administrative positions in the large camps, it should be explained that while the original divisions, those organized late in 1917, remained in camps in the United States, in each camp the division medical staff administered all Medical Department affairs for the entire camp.

These divisions began to be transferred overseas in the early spring of 1918, and the movement continued throughout the summer. After the departure of its division, each camp or cantonment still continued to function to full capacity, new men from the draft being brought in immediately, and so it was necessary to assemble an entirely new staff for each camp medical organization. In anticipation of this situation understudies for such Medical Department administrative positions had been placed in the large camps. New camp surgeons with all their necessary assistants were thus immediately available, without embarrassment or delay, to take over the camp duties from the medical staffs of the departing divisions. Again, as soon as a new camp surgeons' organization began to work smoothly a new group of medical officers was ordered to the station for instruction and training as understudies.

It is clear from what has been said that the plan pursued was to develop and maintain a gradually increasing reserve of selected medical officers qualified by special training in medico-military administration, sanitation, and disease prevention. This was essential in order to meet the continually increasing demands due to enlargements of the military program which continued until the armistice. It is believed that the method followed met with success, for it enabled the section to meet all requests for this class of personnel, and in most instances the right man was picked for the place.

The section also supplied Medical Department personnel for medical examining boards for all camps and cantonments, and controlled assignments and reassignments of such personnel from station to station to meet changing demands. This was an especially prominent activity of the section during the demobilization period.

SUBSECTION OF PHYSICAL STANDARDS AND EXAMINATIONS.

For many years prior to the World War the Division of Sanitation handled all medical questions relating to physical standards, physical examinations of officers and enlisted men, individual waivers of physical defects, discharges on certificate of disability for enlisted men, and discharges and retirements on physical grounds for officers. With the small peace-time Regular Army no special machinery was necessary for the activities enumerated, these being handled by the division chief; but with the tremendously expanded Military Establishment incident to the war the volume and scope of this special work were increased to such an extent that it became necessary to establish a separate subsection within the Miscellaneous Section of the division.

Physical standards.—The physical standards of the pre-war period[56] were relatively severe, and wisely so, as it was possible to maintain the authorized strength of the small Regular Army by voluntary enlistments without being driven to the necessity of accepting physically substandard and otherwise physically undesirable men. But with the passage of the selective-service act it was at once apparent that pre-war physical standards must be materially lowered if soldiers in sufficient numbers to prosecute the war successfully were to be secured from the age groups of the male population liable to the draft under the provisions of the act in question. The first war revision of physical standards was prepared in the Sanitation Division in the early summer of 1917. This was published by the Provost Marshal General on July 2, 1917 (Form 11, P. M. G. O.)[57] as Regulations Governing Physical Examinations under the Selective-Service Act. It should be noted that these revised standards related to registrants under the draft act only, the higher pre-war requirements still governing among those applying for voluntary enlistment. A few weeks later a pamphlet,[58] Instructions for the Physical Examination of Drafted Men at National Army Cantonments, was prepared in the Sanitation Division and furnished all medical officers in camps for their information and guidance. This pamphlet brought together under one cover various memoranda which had been previously issued by the Surgeon General from time to time in explanation and interpretation of the published physical standards for the draft, and also included certain instructions and details of procedure to be carried out in the physical examinations at camps and other military stations.

Another revision of the physical standards for drafted men was called for by the Provost Marshal General in October, 1917. This was also prepared in the Division of Sanitation. It was published as Part VIII of Selective-Service Regulations on November 8, 1917. Very few fundamental changes characterized this revision, but in it there were included all modifications and changes in Form No. 11, P. M. O., which had been made since the original publication of July 2, 1917. Furthermore, certain physical requirements were more clearly defined and made more specific. Herein appeared, for the first time, reference to the class of substandard men later to be taken into the Army for "limited service." This revision was in force for only a short period.

There followed a revision with which the Division of Sanitation had nothing to do. This revision was called "Changes in Selective-Service Regulations No. 3," [59] and was formulated by a board of medical officers appointed for the purpose by the Surgeon General.[60] This revision was not considered a success.[61] One of the outstanding features provided for the unconditional acceptance for general military service of registrants having "remediable defects." Hospital facilities and personnel were totally inadequate to accomplish the wholesale reclamation of unfit men in the midst of war activities.[62]

This third revision was soon abandoned, and again the Surgeon General convened a board of medical officers for the purpose of making a revision.[63] Many changes were made, and a thorough, practicable, and remarkable revision resulted, which immediately was put into operation. Registrants with medical defects were now classified in a "deferred remediable group" eligible for call when wanted. By this revision, and for the first time, the same standards were fixed for draft and for voluntary enlistments. A few minor modifications and changes in the standards now set were made from time to time during the summer of 1918, but in general it may be said that this latest revision stood the test in the induction of new men during the months of greatest war activity. A later revision, which was prepared in the Division of Sanitation in September, 1918,[64] remained in effect during the remainder of the war.

One important change may be noted in the last revision, namely, that the "deferred remediable group" was greatly restricted and in effect eliminated as an important class. About midsummer, 1918, it was decided to induct registrants who previously had been placed in "deferred remediable group," [65] for special and limited service, when qualified for such service, without holding them further awaiting operation or other corrective measures to fit them for full military service. This decision resulted in making immediately available for limited service many thousands of registrants who were physically qualified for such service and who otherwise would never had been called upon for service during the war.

Physical examinations for induction.—For a time during the first year of the war there was no central coordination or supervision in the Surgeon General's Office of physical examinations or of medical examining boards in camps. Under instructions governing physical examinations of registrants published in 1917,[66] there were prescribed two distinct examinations: (*a*) Preliminary examination made immediately following arrival in camp, usually by regimental or battalion medical officers; (*b*) final examination made by various boards of specialists, i. e., tuberculosis, cardiovascular, orthopedic, psychiatric, etc.

Under this scheme of examination, each board of specialists for conducting the final examination was designated by the professional division of the Surgeon General's Office concerned, and each operated independently of the others and independently of the camp surgeon himself. The camp surgeon was held responsible for the prompt making of the preliminary examination in his camp, and there was no serious criticism relative to the manner in which this part of the examination was conducted. With respect to the final examination, many months often elapsed before the various special boards were able to complete their physical surveys in a camp. In some instances men were actually ordered overseas before complete special final examinations had been made. In certain camps when orders were received to prepare for overseas service there was a hurried effort to complete the special final examinations, this action necessarily resulting in the elimination of men as physically unfit after they had been in training for a considerable period and were otherwise ready for overseas service. Such late elimination necessitated filling the gaps with untrained men at the last moment. Many complaints and criticisms were made by commanding officers relative to this method of procedure, and it was obvious that it was a failure.[67] Early in April, 1918, upon the recommendation of the Sanitation Division, a change was made and it was provided that the "preliminary" and "final" examinations should be combined in a single examination by a board of medical officers, including all necessary specialists. This examination was to be made immediately after arrival of the registrants in camp. Telegraphic instructions to this effect were sent to all camp surgeons by this office on April 29, 1918, under authority from the War Department.[68] This plan was continued during the remainder of the war and operated very satisfactorily. All special camp examining boards were at once dissolved and their personnel made available for the single examining board prescribed. Thus each camp examining board contained specialists from all branches of medicine and surgery and every soldier in the course of his examination was required to pass, unclothed, before the different specialists in order to receive a critical examination of every part of the body. A chief medical examiner was designated for coordinating and maintaining the general efficiency of the full examining board.

In anticipation of demobilization, new forms for recording the results of physical examinations preceding separation from the service were prepared in the Subsection of Physical Standards and Examinations. This was accomplished several days before the signing of the armistice, and the forms were approved by the War Department, printed and ready for distribution at the time demobilization was ordered.[69] A comprehensive scheme for conducting the physical examination was worked out, the basic instructions on the subject being circularized by the War Department.[70] The Medical Department sent additional instructions to camp surgeons and other senior medical officers relative to the procedure of conducting examinations preceding demobilization.[71]

In camps the machinery for the examination of registrants was made use of in conducting the examination for demobilization, the same type of examining board being employed and the same careful physical survey being given as was required for entrance into the service.

The subject of reports was also an important one. Reports were required at the end of each month from all stations in the United States, these covering the composition of examining boards and the details of the work during the month. So far as the latter were concerned, separate reports were required for examination preceding separation from the service, for voluntary enlistment, and for soldiers discharged on surgeon's certificate of disability, and until the signing of the armistice such reports were also required for the examination of registrants entering the service. The monthly reports were consolidated and tabulated in the section and detailed information was thus always available concerning the status of physical examination at all stations.

Much difficulty was experienced because of the lack of proper buildings in which to conduct physical examinations.[72] Sketches were prepared by the Surgeon General, and repeated recommendations to the War Department were made for the construction of a special building for this purpose in every large camp and cantonment. Finally, just before the armistice was signed, plans were approved for a building designed to accommodate all the activities connected with induction, namely, physical examination, vaccination, furnishing clothing and equipment, writing insurance, and the clerical work pertaining to the personnel officer. The basic design of the portion of this building intended for physical examination was initiated in this section, and if the construction had been completed, which was not the case, the work of examination would have been greatly facilitated.

SUBSECTION ON VERMIN INFESTATION AND DISINFESTATION.

The eradication of vermin with a view to preventing louse-borne diseases was one of the important sanitary problems during the war. The conditions existing abroad resulted in a prevalence of lice among soldiers which had probably never been equaled before. No army abroad was spared from this pest or from the diseases conveyed by lice. In April, 1918, it was reported from the American Expeditionary Forces that about 50 per cent of all troops arriving from the United States were vermin infested.[73]

Later investigations showed that these estimates were excessive and that such troops as were infested consisted almost exclusively of colored labor battalions, hastily organized and sent overseas.[74] On June 18, 1918, a circular letter was sent to all camps, cantonments, and posts requesting information on the degree of lice infestation present and the methods employed for its control.[75]

At this time a paragraph dealing with this question was added to Special Regulations No. 28, which governed sanitation and the control of communicable diseases.[76]

Early in June, 1918, a subsection on vermin infestation was organized in the Division of Sanitation with a medical officer in charge.[77] Somewhat later an officer of the United States Public Health Service was attached to the Army and ordered to France to study conditions regarding louse infestation on transports and at foreign ports, while the chief of the subsection was ordered to Newport News to make similar studies there. The results of these investigations indicated that vermin infestation was more common in the United States than had previously been supposed. At Newport News 0.6 per cent of a certain group of white soldiers and 42 per cent of a certain group of colored soldiers were found infested, mostly with pubic lice.[78]. Of the crews of three transports 2.1 per cent were found louse-infested.[79] Investigations carried on at Camp Meade showed that 3.5 per cent of white and 26 per cent of negro recruits arriving in camp at one period were infested.[80] Vermin infestation was not found among troops on transports at that time, but the degree of infestation at base ports and rest camps in France and England was very high. As a result of this investigation universal delousing of all troops before embarking for Europe was recommended.[81]

The problem of excluding vermin infestation and louse-borne diseases from the United States was deemed of great importance, and a program of inspection and delousing with this in view was put into effect.

An important feature of the administrative work of this subsection was the designing, in conjunction with the Construction Division in the War Department, of delousing plants, known in some stations as "sanitary process plants." [82] These plants were designed in three sizes, capable of disinfesting 130, 40, and 24 men, respectively, per half hour. Plans had been approved for constructing such plants in 45 camps, at a cost of about $1,800,000, when the signing of the armistice put an end to this work. However, nine of the large-size plants and one medium-size plant, together with several nonstandardized improvised plants, were built, equipped, and satisfactorily operated at ports and camps of debarkation for the purpose of handling troops returning from France.

Among other activities of the subsection may be mentioned various inspections of the debarkation camps and ports of embarkation with a view to determining the efficiency of the methods of disinfestation employed. An educational campaign was started, of which the most important feature was the making of a motion picture called "Fighting the Cootie." This was used for the instruction of enlisted men. Likewise, various memoranda and publications on the louse problem were issued. Research work consisted in examining various substances reputed to be lethal for vermin, experimenting with gases used for fumigation, investigating methods for the impregnation of underwear, studying various soaps and powders, and testing laundry appliances, dry-cleaning machinery, and other apparatus recommended for deverminizing purposes.

The various tables dealing with the degrees of infestation of troops in camp, embarking and debarking, and also pertaining to the degree of infestation found in troops arriving from England and France, are included in the chapter on vermin infestation in the volume on Sanitation.

Over 2,000,000 troops were returned to the United States and, so far as known, not a single case of louse-borne disease was introduced, nor was vermin infestation carried into the civil communities by discharged soldiers.[83] Of the same number of men examined for discharge from the service only five in a hundred thousand were found with any of the three types of lice. These results may be regarded as conclusive evidence of the success of the methods in vogue abroad, at home ports, and in transit, since about 90 per cent of the troops arriving at the base ports in France, immediately following the signing of the armistice, were reported to be infested,[84] though later on this percentage was much reduced.

SUBSECTION OF CORRESPONDENCE.

Correspondence relating to the physical condition of individual officers and enlisted men had long been one of the functions of this division and was so continued during the war. On November 3, 1918, the officer in charge of this subsection was temporarily detached and assigned to the Personnel Branch of the General Staff as the representative of the Surgeon General, with the object of expediting action on matters relating to the physical condition of individual officers and candidates for commission. The work of this officer in the Personnel Branch continued a part of the Division of Sanitation, since all action taken by him on official papers was in the name of the Surgeon General and appeared of record in the files of this office.

Official and unofficial papers relating to individuals and requiring the action of this subsection multiplied many times during the war. The work also increased steadily following the signing of the armistice and during the months of demobilization. While much of the correspondence was more or less routine, many questions arose in individual cases requiring on the part of the officer in charge great familiarity with existing orders, decisions, precedents, and procedures relating to Army administration.

SUBSECTION OF DEVELOPMENT BATTALIONS.

War Department orders were issued on May 9, 1918, directing that one or more development battalions be organized in each of the divisional camps of the National Army, the National Guard, and the Regular Army, and in other camps when so directed by the Secretary of War. In the order in question, the functions of development battalions were specified as follows:[85]

(*a*) To relieve divisions, replacement organizations, etc., of all unfit men.

(*b*) To conduct intensive training with a view of developing unfit men for duty with combatant or noncombatant forces either within the United States or for service abroad.

(*c*) To promptly rid the service of all men who, after thorough trial and examination, are found physically, mentally, or morally incapable of performing the duties of a soldier.

A board, consisting of a medical officer attached to the Division of Physical Reconstruction of the Surgeon General's Office, a member of the General Staff, and a civilian, was appointed by the Secretary of War on June 10, 1918, "for the purpose of coordinating the work in connection with the establishment of development battalions."[86] The early plans for the medical phases of the work were entirely in the hands of this medical officer from the date of establishment of development battalions up to September 9, 1918.

The medical and administrative problems arising in connection with the establishment and operation of these organizations were numerous and often involved questions of policy in which several divisions of the Surgeon General's Office were immediately concerned. This complicated matters, and in their earlier stages development battalion activities in the Surgeon General's Office were not so well coordinated as might have been desired. The Acting Surgeon General, therefore, on September 9, 1918, ordered the transfer of the officer in charge of this work in the Division of Physical Reconstruction to the Division of Sanitation "for the purpose of assuming the duty in connection with the activities of development battalions, the work of which is placed under the direction of the officer in charge of the Division of Sanitation." Subsequent to this order, all medical activities relating to development battalions were coordinated and directed by the officer in charge of the Division of Sanitation through the officer in immediate charge of the work.

When the development battalions were transferred to the Division of Sanitation, immediate steps were taken to organize a group of inspector-instructors[87] composed of specially selected medical officers who were more or less familiar with problems of physical training and reconstruction. Several of these officers were brought together in the Surgeon General's Office, where they were familiarized with all published orders relating to development battalions and with previous plans for these organizations. Solutions were worked out to meet such defects in organization and administration as had already appeared. Information relative to the defects in question was based chiefly upon reports from medical officers in the various camps where battalions had already been formed. The inspector-instructors were then ordered to Camp Meade, Md., where a very efficient organization had been developed. They remained there several days under intensive instruction with the development battalion in that camp. Having been thus familiarized with the work at Camp Meade, they were then ordered to other camps, where they gave instruction using the development battalion at Camp Meade as a model.[88] Each inspector-instructor was required to remain at a camp until satisfied that the development battalion was properly organized and equipped and was functioning as intended. Upon the completion of this work, he rendered a report to the Surgeon General covering in detail the conditions found by him within the battalion, in so far as this concerned Medical Department activities, and the results of his efforts to improve matters. Twenty-seven camps were visited by these inspector-instructors and in all of them the foundations were laid for efficient development battalions. Methods of physical training and medical administration were standardized in the camps visited.

Chiefly through the efforts of medical inspector-instructors, about 15 camps developed very efficient systems in their development battalions before the signing of the armistice on November 11, 1918. The men were more rapidly classified and disposed of than was the case at first, and better cooperation between line and medical officers was secured. Physical development work was established on a proper basis and carried out systematically under the immediate supervision of medical officers. Segregation of the ambulant venereal cases from the remainder of the men in the battalions was accomplished whenever possible. In a number of camps schools for instruction in English were established for the benefit of illiterates and non-English-speaking soldiers, as well as other schools for special training in occupations useful to the Army. Recreation, games, and other amusements tending to improve morale were promoted and proved of great value.

Unfortunately, immediately after the signing of the armistice, as a result of the interpretation placed upon certain War Department circulars, the rumor became general in the camps that all men in development battalions were to be demobilized at once regardless of their physical condition. The morale of these organizations then went down to a very low ebb and in most places it became increasingly difficult to continue any of the real work prescribed for these battalions.

The following figures were obtained from the consolidated reports submitted to the Surgeon General's Office by the several camps. They cover operations from the organization of the developmental battalions to November 13, 1918, and, so far as they go, indicate approximately the results attained. As some of the camps failed to submit final reports, and as the reports from a few camps have been disregarded because in them the development battalions were not organized according to War Department orders, these figures are not complete. It is believed, however, that they represent a close approximation, so far as percentages are concerned, for all camps having development battalions.

The total number of men in development battalions was approximately 224,717. Classified by condition, the results are as follows:[89]

(*a*) Venereals	77,456 (34.4 per cent of total).
(*b*) Orthopedic cases	28,823 (12.7 per cent of total).
(*c*) Mental conditions	4,798 (2.1 per cent of total).
(*d*) Functional heart conditions	10,917 (4.8 per cent of total).
(*e*) Miscellaneous	53,540 (23.8 per cent of total).
(*f*) Non-English-speaking, illiterates, morally unfit, conscientious objectors, draft evaders, enemy aliens, etc	49,183 (21.4 per cent of total).

Figures showing the method of disposition are available for 168,583 men.

Transferred to class A (full duty)	41,450 (25 per cent).
Transferred to class C–1 (limited overseas duty)	46,054 (27 per cent).
Transferred to class C–2 (limited domestic duties only)	42,530 (25 per cent).
Discharged from service	36,274 (21 per cent).
Deserted	919 (0.5 per cent).
Died	1,356 (0.8 per cent).
	168,583

PERSONNEL.[d]

(April, 1917, to December, 1919.)

Birmingham, H. P., Brig. Gen., M. D., chief.
Howard, Deane C., Col., M. C., chief.
Reynolds, Frederick P., Col., M. C., chief.

Ashburn, Percy M., Col., M. C.
Chamberlain, Weston P., Col., M. C.
Church, James R., Col., M. C.
Clayton, Jere B., Col., M. C.
Conner, Lewis A., Col., M. C.
Fisher, Henry C., Col., M. C.
Hutton, P. C., Col., M. C.
Lewis, William F., Col., M. C.
Mock, Harry E., Col., M. C.
Morris, Samuel J., Col., M. C.
Schreiner, Edward R., Col., M. C.
Shaw, Henry A., Col., M. C.
Truby, Albert E., Col., M. C.
Truby, Willard F., Col., M. C.
Van Dusen, James W., Col., M. C.
Vaughan, Victor C., Col., M. C.
Weed, Frank W., Col., M. C.
Welch, William H., Col., M. C.
Wrightson, William D., Col., S. C.
Bowles, James T. B., Lieut. Col., S. C.
Davis, Charles E., Lieut. Col., M. C.
Fulton, John S., Lieut. Col., M. C.
Hoad, William S., Lieut. Col., S. C.
Hopwood, L. L., Lieut. Col., M. C.
Hume, Edgar E., Lieut. Col., M. C.
Kremers, Edward D., Lieut. Col., M. C.
Love, Albert G., Lieut. Col., M. C.
McIntyre, Henry B., Lieut. Col., M. C.
Register, Edward C., Lieut. Col., M. C.
Sherwood, John W., Lieut. Col., M. C.
Shields, William S., Lieut. Col., M. C.
Whitmore, Eugene R., Lieut. Col., M. C.
Williams, Linsley, Lieut. Col., M. C.
Balderston, S. V., Maj., M. C.
Barney, Joseph N., Maj., M. C.
Bascom, George R., Maj., S. C.
Bolling, Robert H., Maj., M. C.
Castlen, C. R., Maj., M. C.

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[d] In this list have been included the names of those who at one time or another were assigned to the division during the period April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Cleave, John W., Maj., S. C.
Cornell, Walter S., Maj., M. C.
Cox, Samuel C., Maj., M. C.
Davenport, Charles B., Maj., S. C.
Delafield, Robert H., Maj., S. C.
Doyle, Luke C., Maj., S. C.
Fuller, Harry N., Maj., S. C.
Hubbard, Roscoe C., Maj., M. C.
Hyde, Charles G., Maj., S. C.
Luckie, Lorenzo F., Maj., M. C.
Morehouse, Arthur, Maj., S. C.
Neff, E. B., Maj., S. C.
Plotz, Harry, Maj., M. C.
Rasmussen, Nels, Maj., S. C.
Ross, F. A., Maj., S. C.
Sledge, Edwin S., Maj., M. C.
Sprague, John T., Maj., M. C.
Telfair, John H., Maj., M. C.
Tucker, Edward J., Maj., S. C.
Yost, John D., Maj., M. C.
Brown, Robert H., Capt., S. C.
Craig, R. H., Capt., S. C.
Follin, James, Capt., S. C.
Haskins, Charles A., Capt., S. C.
Hammon, Charles C., Capt., S. C.
Lipsett, J., Capt., M. C.
Andrew, H. H., First Lieut., M. C.
Cavanagh, Arthur L., First Lieut., S. C.
Donoho, Fitz W., First Lieut., S. C.
Frey, C. N., First Lieut., S. C.
Hulse, Fernand E., First Lieut., S. C.
Sharp, John P., First Lieut., M. C.
Armstrong, Glendon H., Second Lieut., S. C.
Donaghy, Robert J., Second Lieut., S. C.
Erbe, Ernest A., Second Lieut., S. C.
McClure, J. L., Second Lieut., S. C.
Sullivan, L. R., Second Lieut., S. C.
Dunlap, Fayette, contract surgeon.
White, J. H., senior surgeon, U. S. Public Health Service.

REFERENCES.

(1) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1015.
(2) Personal records of Col. H. P. Birmingham, M. C., and Col. George E. Bushnell, M. C. On file, Commissioned Personnel Division, S. G. O.
(3) Annual Report of the Surgeon General, United States Army, 1918, 273; 1919, Vol. II, 1015.
(4) Office order No. 97, S. G. O. Organization Chart, December 1, 1918. On file, Record Room, S. G. O., Confidential Files.
(5) Annual Report of the Surgeon General, United States Army, 1918, 273.
(6) G. O., No. 45, W. D., September 11, 1916.

(7) Sanitary Regulations No. 28. Sanitary Regulations and Control of Communicable Diseases, August 10, 1917.

(8) Annual Report of the Surgeon General, United States Army, 1918, 273. Sanitary Inspection Reports. On file, Division of Sanitation, S. G. O., and Record Room, S. G. O., 721.1.

(9) File of calls from various States, selective-service men, filed by date of issue. On file, Office of the Provost Marshal General, Washington, D. C.

(10) "Complete Reports." On file, Construction Division, Office of the Quartermaster General.

(11) Personal records. On file, Commissioned Personnel Division, and chief clerk's office, S. G. O.

(12) S. O., No. 153, pars. 9 and 10, W. D., July 1, 1916.

(13) S. O., No. 156, par. 23, W. D., July 6, 1917; office orders, S. G. O., August 9, 1917; S. O., No. 188, W. D., August 14, 1917, par. 40.

(14) Quarterly report, Division of Sanitation, January to March, 1918. On file, Record Room, S. G. O., 024.13.

(15) List of sanitary inspections made by officers of the Inspection Section during the period of the World War. On file, Record Room, S. G. O., 721.1 (Sanitary Inspections).

(16) Office order, S. G. O., No. 7, February 20, 1918. On file, Record Room, S. G. O., 721.1 (Sanitary Inspections).

(17) Sanitary inspection reports. On file, Record Room, S. G. O., 721.1 (Sanitary Inspections).

(18) Memo. from the Provost Marshal General and the Surgeon General for The Adjutant General, January 9, 1918. Subject: Installation of Tabulating Card System in the Surgeon General's Office of the War Department to Tabulate the Records of Men Rejected for Physical Defects-authorization contained in memo. from The Adjutant General to the Provost Marshal General and the Surgeon General, United States Army, on the same subject, January 28, 1918. On file, Record Room, S. G. O., 413.5 (Tabulating Machines).

(19) Memo. from Maj. A. G. Love, M. C., to the executive officer, S. G. O., June 20, 1921. On file, Record Room, S. G. O., 721.6–2.

(20) Letter from Adjutant General to commanding officers of ports and other commands, May 27, 1918. On file, Mail and Record Division, A. G. O., 706 (Miscellaneous Division) (EE).

(21) Office order, No. 68, S. G. O., July 23, 1918. On file, Record Room, 024.13 (Medical Record Division).

(22) Instructions. On file, Record Room, S. G. O., 188799 (Old Files).

(23) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1020.

(24) Weekly bulletin. On file, Record Room, S. G. O., 710–1 (Diseases).

(25) Reports to the Chief of Staff. On file, Record Room, S. G. O., 333 (Individual Camps) (C).

(26) Correspondence. On file, Record Room, S. G. O., 210.31–1 (General).

(27) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1021.

(28) Office order, No. 91, S. G. O., November 2, 1918.

(29) Memo. from Surgeon General to division surgeons, January 1, 1918; memo. from Surgeon General to division surgeons, January 8, 1918. On file, Historical Division, S. G. O.

(30) Manual for the Medical Department, 1916, pars. 371–374; 626.

(31) Second indorsement, W. D., Adjutant General, October 31, 1918, to the Acting Surgeon General, United States Army. On file, Record Room, S. G. O., 210.31–1 (Assignment, Epidemiologists).

(32) Special Regulations No. 28 (Sanitary Regulations and Control of Communicable Diseases).

(33) S. O., No. 176, par. 32, W. D., July 31, 1917.

(34) Memo., S. G. O., January 17, 1918. On file, Record Room, S. G. O., 201 (Wrightson, William D.).

(35) Reports of Section of Sanitary Engineering. On file, Record Room, S. G. O., 322.3 (Sanitary Corps).

(36) Table, June 12, 1918. On file, Record Room, S. G. O., 322.3 (Sanitary Corps).

(37) Applications for Sanitary Engineering Service. On file, Record Room, S. G. O., 201.

(38) Report on School of Sanitary Engineers. On file, Record Room, S. G. O., 322.3 (Camp Greenleaf) (C).

(39) Reports fly and mosquito control. On file, Record Room, S. G. O., 725.1–1.

(40) Plans for water-supply, sewage-disposal, and waste-disposal plants. On file, Record Room, S. G. O., 720.2 (General).

(41) Letter from The Adjutant General to the Surgeon General, July 5, 1918. On file, Record Room, S. G. O., 322.2 (Sanitary Corps).

(42) Bull., No. 66, W. D., December 31, 1918.
(43) Reports from Capt. E. J. Tucker, S. C., to the Surgeon General, United States Army. Subject: Sewage Disposal at Cantonments (Fort Myer, Va., and Camp Meade, Md.). On file, Record Room, S. G. O., 672 (Fort Myer, Va.) (N); 620.6 (Camp Meade) (D).
(44) First indorsement, W. D., A. G. O., August 30, 1918. Through chief of the Construction Division to the Surgeon General. On file, Record Room, S. G. O., 720.2 (General).
(45) G. O., No. 67, par. 5, W. D., July 15, 1918.
(46) G. O., No. 79, W. D., August 24, 1918.
(47) Reports of colleges (Students' Army Training Corps units). On file, Sanitation Division, S. G. O.
(48) Letter from the Provost Marshal General to the commanding officer, Students' Army Training Corps, September 9, 1918. Subject: Individual Induction of Registrants into Students' Army Training Corps. On file, Record Room, S. G. O., 322.021 (Students' Army Training Corps).
(49) Letter from The Adjutant General to the Surgeon General, September 21, 1918. On file, Record Room, S. G. O., 211 (Contract Surgeons).
(50) Records of assignments of dentists. On file, Record Room, S. G. O., 211 (Dentists).
(51) Circular letter from the Surgeon General, United States Army, to the surgeons of all Students' Army Training Corps units on hospital facilities, Novemebr 1, 1918. On file, Sanitation Division, S. G. O.
(52) Memo. from Surgeon General to surgeons of units, October 22, 1918. On file, Record Room, S. G. O., 322.021 (Students' Army Training Corps).
(53) Circular No. 124, W. D., December, 1918.
(54) Annual report of the Surgeon General, United States Army, 1919, Vol. II, 1030.
(55) Instruction reports. On file, Record Room, S. G. O., 353 (Sanitation, Camp Greenleaf) (C).
(56) G. O., No. 66, W. D., 1910.
(57) Compiled Rules, Provost Marshal General's Office, Nos. 6, 8, and 10. On file, Record Room, S. G. O., Document File.
(58) Instructions for the Physical Examination of Drafted Men at National Army Cantonments. Issued by the War Department, S. G. O., August 25, 1917. On file, Sanitation Division, S. G. O.
(59) Changes in Selective-Service Regulations No. 3, January 25, 1918 (Bloodgood Revision). On file, Law Library, Office of the Judge Advocate General.
(60) S. O., No. 303, par. 272, W. D., December 29, 1917.
(61) Annual Report of the Surgeon General, United States Army, 1918, 278.
(62) Extracts and Quotations from Reports of Sanitary Inspectors made during the World War. On file, Sanitation Division, S. G. O.
(63) S. O., No. 55, par. 51, W. D., March 7, 1918.
(64) Special Regulations No. 65, W. D., June 5, 1918; revised November 8, 1918.
(65) Form No. 75, Provost Marshal General's Office, revised September 27, 1918.
(66) Memo. No. 3. Subject: Instructions Governing Physical Examinations, S. G. O., August 22, 1917. On file, Sanitation Division, S. G. O.
(67) Correspondence. On file, Record Room, S. G. O., 327.2 (Examinations, Name of Camps) (C).
(68) Telegram from Surgeon General, United States Army, to camp surgeons, April 29, 1918. On file, Record Room, S. G. O., 327.2 (Examinations).
(69) Forms 135-3 and 395-1, Adjutant General's Office. On file, Record Room, A. G. O., 702.1 (Examinations, enlisted men); 702.2 (Examinations, Officers).
(70) Circular, No. 73, W. D., November 18, 1918.
(71) Circular Letter, S. G. O., November 21, 1918. On file, Record Room, S. G. O., 370 (Demobilization).
(72) Memo. for Assistant Secretary of War from Assistant Chief of Staff, September 24, 1918, recommending approval for recruit examining building (approved October, 1918). On file, Mail and Record Division, A. G. O., 652 (Misc. Div.).
(73) Memo. for Lieut. Col. James A. Logan, General Staff, from Col. Henry C. Fisher, M. C., general medical inspector, A. E. F., France, April 8, 1918; first indorsement, W. D., S. G. O., May 1, 1918, to surgeon at port of embarkation, Hoboken, N. J. On file, Record Room, S. G. O., 729.5 (Lice, port of embarkation, Hoboken, N. J.) (N).

(74) Fifth indorsement, W. D., S. G. O., July 22, 1918, to The Adjutant General of the Army. On file, Record Room, S. G. O., 729.5 (Lice).

(75) Letter from The Adjutant General of the Army to all departments, divisions, ports of embarkation commanders, bureaus of War Department, and all excepted places, June 18, 1918. Subject: Estimates for Delousing Plants. Letter from Surgeon General, United States Army, to camp surgeons, July 25, 1918. Subject: Vermin Infestation. On file, Division of Sanitation, Surgeon General's Office (Louse Infestation).

(76) Special Regulations No. 28, W. D., Changes No. 2, June 17, 1918, par. 18½.

(77) S. O., No. 143, W. D., June 19, 1918, par. 150.

(78) Report on Louse Investigations, Office of the Surgeon, Newport News, Va., June 18, 1918. On file, Record Room, S. G. O., 729.5 (Vermin, Newport News, Va.) (N).

(79) Correspondence. On file, Record Room, 729.5 (Lice, Ships) (BB).

(80) Reports. On file, Record Room, S. G. O., 729.5 (Vermin, Camp Meade) (D).

(81) Telegram from General March to General Pershing, November 23, 1918. On file, Record Room, S. G. O., Cablegram File.

(82) Letter from the Surgeon General to The Adjutant General, August 9, 1918. Subject: Delousing Plants. On file, Record Room, S. G. O., 679 (Delousing Plants).

(83) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1031.

(84) Ibid., 1030.

(85) G. O., No. 45, W. D., May 9, 1918.

(86) S. O., No. 135, par. 239, W. D., June 10, 1918.

(87) Letter from theActing Surgeon General to camp surgeon, Camp Meade, September 21, 1918. Subject: Medical Personnel for Development Battalions. On file, Record Room, S. G. O., 210.3 (Camp Meade) (D).

(88) Report of sanitary inspection, Camp Meade, Md. On file, Record Room, S. G. O., 721.5 (Sanitary Report).

(89) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1031.

CHAPTER IX.

DIVISION OF INFECTIOUS DISEASES AND LABORATORIES.

ORGANIZATION.

In June, 1917, the Surgeon General directed that a division be organized in his office to include laboratories and that, in addition, the activities of the Medical Department in dermatology, urology, and the prevention of venereal diseases be combined therewith.[1] The thought behind the organization of this division was that the control of infectious diseases, at least those of known etiology, was largely a laboratory problem. It was equally apparent that the laboratories were to be but the working arm of the division and that scientific investigation and the inauguration and supervision of methods for the control of infectious diseases constituted its real problem. The division was therefore known as the Division of Infectious Diseases and Laboratories.

The division, at the start, was divided into three sections: Laboratories, Dermatology and Urology, and Combating Venereal Diseases. A reorganization was effected on November 30, 1918, whereby the Section of Dermatology and Urology was transferred to the Division of Surgery,[2] the Section of Epidemiology of the Division of Sanitation was transferred to this division,[2] and the Army Medical Museum with the Instruction Laboratory, Medical Department, was placed in this division.[2]

The Section of Epidemiology was a most valuable addition, but its possibilities in this connection were not fully realized until very late in the war. That they were realized ultimately, and that, in consequence, the Section of Epidemiology of the Division of Sanitation was made a part of the Division of Infectious Diseases and Laboratories, is of great interest from the practical standpoint as indicating that, as the result of experience, this organization would probably obtain in future wars rather than having the section in question a part of the Division of Sanitation, as was the case in the World War. What has just been said regarding the Section of Epidemiology applies equally to the Army Medical Museum with the Instruction Laboratory. Both of these sections functioned in another division during the World War, however, so their story must be told there and not here. (See Chap. XXIII.)

The Section on Dermatology and Urology, on the other hand, was probably wrongly placed in the Division of Infectious Diseases and Laboratories, yet as it actually functioned here its administrative history finds its proper place in this chapter.

The administrative history of this division may seem to be more or less confused with that of the Division of Sanitation. Indeed, since the purposes of the two divisions were identical, in that each had for its principal object the prevention of disease in troops, it was difficult to draw a hard and fast line between them in the delegation of war-time function. Nor, as a matter of fact, did a fixed line of demarcation exist. Overlapping of effort was inevitable, and confusion was prevented only by frequent conferences between the divisions or sections thereof and by the exercise of a spirit of cooperation. It is not impossible, however, to show where the line was drawn between the two divisions in theory and in the main in practice. The Division of Sanitation was the executive division so far as measures taken by the Medical Department for the prevention of disease in troops were concerned, while the Division of Infectious Diseases and Laboratories concerned itself with scientific study of disease in troops in the United States, and, based on this, made recommendations for its control. After all, the relation between the two divisions was not so different from that which exists between a city board of health and its laboratory, the Division of Sanitation representing the board of health and the Division of Infectious Diseases and Laboratories, the municipal laboratory, though the latter division, in its investigations of disease, by no means confined itself to laboratory procedures, as would be the case with the city laboratory.

The Division of Infectious Diseases and Laboratories, like the Division of Sanitation, had certain sections which seemed to be remotely, if at all, concerned with their main object. This is true, and the fact must be accepted. The causes are actually not very hard to find. The expansion of the Surgeon General's Office was enormous and rapid and, in consequence, some sections were placed where it was most convenient to administer them rather than where they logically belonged. The various functions are shown in Charts IX and X. Time would have corrected this condition and, as a matter of fact, had already done so in part, notably by the office reorganization of November, 1918. (See Chart XXIV.)

LABORATORY SECTION.

Progress in medicine in the decade preceding the World War is conceded to have been the greatest in the lines covered by technical laboratories, exceeding even the advances made in the surgical treatment of disease. Problems of diagnosis and treatment had been studied intensively by experienced laboratory investigators, both in this country and abroad, with encouraging advances in methods of diagnosis and treatment.

Prophylaxis against typhoid fever was made compulsory in our Army in 1911.[3] Ability to control this disease was well established during the mobilization on the Mexican border in 1911. The Medical Department felt confident that this disease would be a negligible quantity during the war. Some fear was felt that the dysenteries, particularly the bacillary types, would give some trouble. Their prevention by specific treatment had not been accomplished, but since their epidemiology was known it was believed that better sanitary appliances, plus personal hygiene, together with approximately accurate methods of laboratory diagnosis, would make possible the control of this group of diseases. In the history of all wars of which we have medical records of diseases affecting troops, two groups of disease are found of serious moment. These are first, intestinal diseases, and second, the sputum-borne infections; i. e., diseases at present conceded to be transmitted by means of discharges from the respiratory tract. With the intestinal group under control, as has already been indicated to have been the case, it appeared that our chief problem

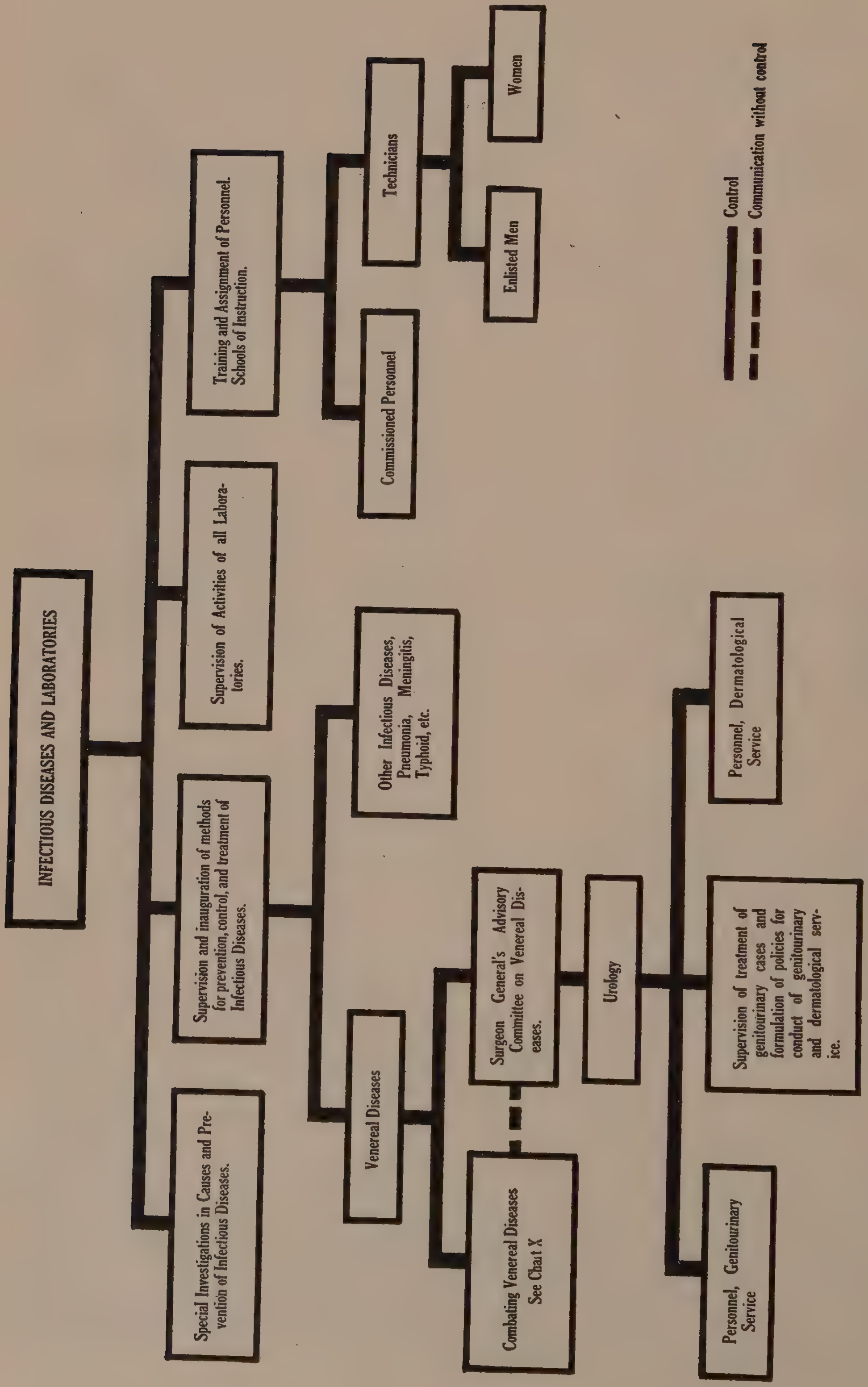
INFECTIOUS DISEASES AND LABORATORIES
Training and Assignment of Personnel. Schools of Instruction.
Supervision of Activities of all Laboratories.
Supervision and inauguration of methods for prevention, control, and treatment of Infectious Diseases.
Special Investigations in Causes and Prevention of Infectious Diseases.
Commissioned Personnel
Technicians
Enlisted Men
Women
Other Infectious Diseases, Pneumonia, Meningitis, Typhoid, etc.
Venereal Diseases
Surgeon General's Advisory Committee on Venereal Diseases.
Combating Venereal Diseases See Chart X
Urology
Personnel, Dermatological Service
Supervision of treatment of genitourinary cases and formulation of policies for conduct of genitourinary and dermatological service.
Personnel, Genitourinary Service
Control
Communication without control

CHART IX.—Division of Infectious Diseases and Laboratories, Surgeon General's Office, June, 1918.

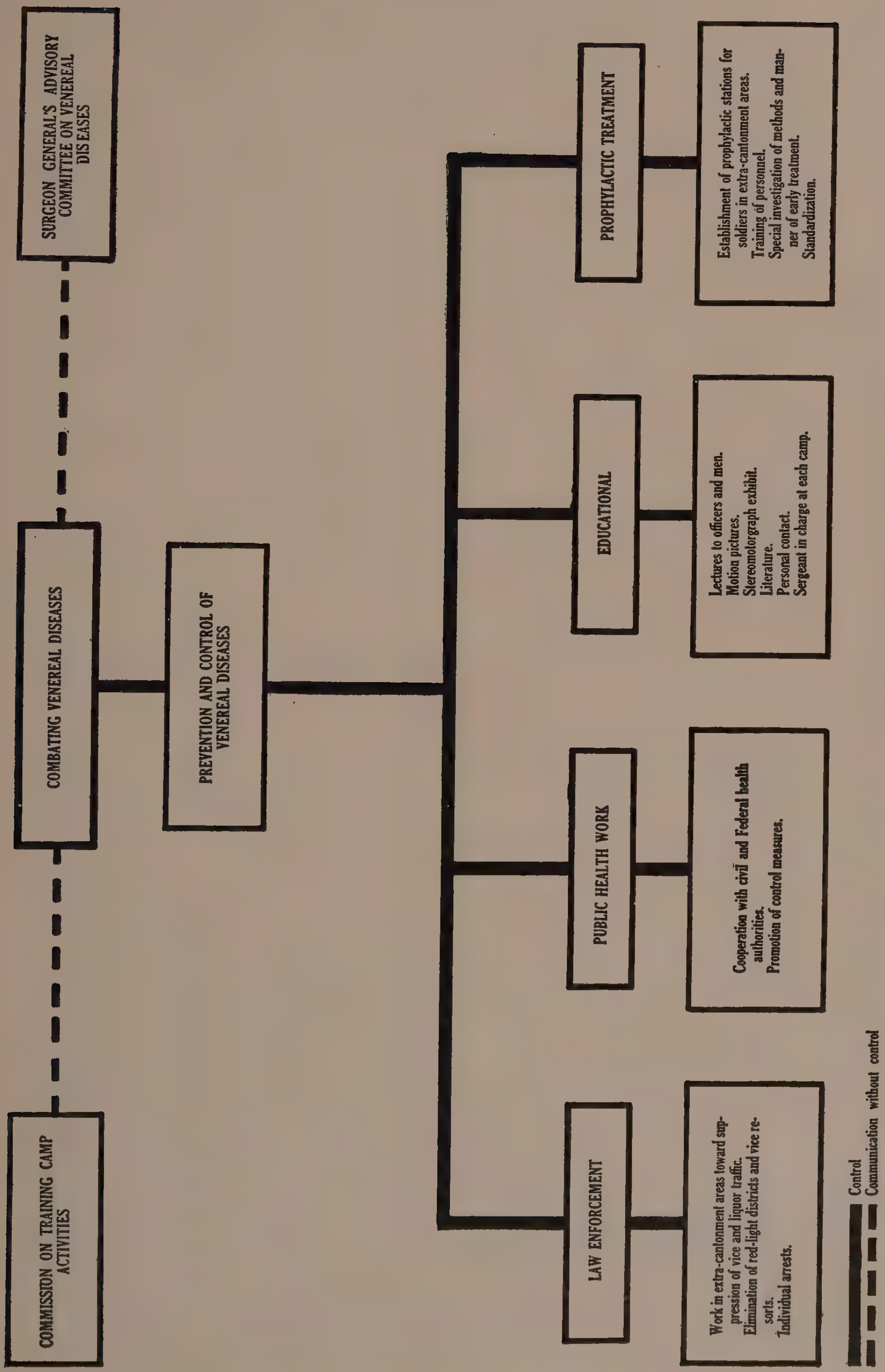
COMMISSION ON TRAINING CAMP ACTIVITIES
COMBATING VENEREAL DISEASES
SURGEON GENERAL'S ADVISORY COMMITTEE ON VENEREAL DISEASES
PREVENTION AND CONTROL OF VENEREAL DISEASES
LAW ENFORCEMENT
PUBLIC HEALTH WORK
EDUCATIONAL
PROPHYLACTIC TREATMENT
Work in extra-cantonment areas toward suppression of vice and liquor traffic.
Elimination of red-light districts and vice resorts.
Individual arrests.
Cooperation with civil and Federal health authorities.
Promotion of control measures.
Lectures to officers and men.
Motion pictures.
Stereomotorgraph exhibit.
Literature.
Personal contact.
Sergeant in charge at each camp.
Establishment of prophylactic stations for soldiers in extra-cantonment areas.
Training of personnel.
Special investigation of methods and manner of early treatment.
Standardization.
Control
Communication without control

CHART X.—Section of Combating Venereal Diseases, Surgeon General's Office, June, 1918.

during the war would be the sputum-borne group, including such diseases of both known and unknown etiology.

It was an encouraging fact that in the years just previous to 1917 considerable advances had been made in the study of the sputum-borne group, more particularly by the laboratories of the Rockefeller Institute Hospital in New York City. The diseases of this class of particular importance to the Army, in which extensive work had been done by the institute, were meningitis and lobar pneumonia. Yet the procedures required to make a diagnosis of these diseases were much more elaborate than had been contemplated previously for field laboratories, and required (particularly because of their recent discovery) special training in their technique of nearly all laboratory men available to the Army. In the past it had been possible for one laboratory officer, with a small force of enlisted assistants, more or less trained, to handle the laboratory work, including complement fixation reactions, for an entire Army department, which might contain from 10,000 to 50,000 troops. It was safe to conclude that the new procedures for the sputum-borne or respiratory group of diseases would necessitate at least a trebling of the personnel formerly required, and that they would have to be done at the various places where troops were stationed and could no longer be handled from central points.

The problems confronting the Laboratory Section, therefore, were those of providing adequately trained personnel in considerable numbers; of securing, in the construction plans for hospitals, cantonments, etc., adequate space for laboratory work; and of seeing that an adequate supply of technical apparatus and materials for this work was made available for the use of these laboratories.

PERSONNEL.

At the beginning of the war activities the laboratories of the Army capable of doing extensive work were six in number, viz: The laboratories of the Central, Southern, Philippine, and Hawaiian Departments; that at the Letterman General Hospital, Presidio, San Francisco; and the Army Medical School, Washington, D. C. Their combined officer personnel was about 12.[4]

With the entire medical profession of the country to draw upon, it seemed at first sight an easy matter to obtain sufficient men, adequately trained, to man the numerous laboratories which must be established. However, the procedures made necessary by the recent advances in scientific medicine were as new to the majority of physicians in civil life as to the officers of the Army. As a matter of fact, the percentage of officers from civil life trained in the recent laboratory methods was probably even less than was the case in the Regular Army, as the eight months' period of instruction required at the Army Medical School before the war had familiarized all newly appointed regular officers with this work. In order to choose officers to man the laboratories of the Army, with the aid of the Medical Division of the National Research Council, a list was prepared which contained the names of physicians whose records showed that they had had considerable experience in laboratory work. These doctors were corresponded with, and as rapidly as possible were placed on active duty in the various laboratories. It soon became apparent, however, that it would be necessary to augment this list by going over the application papers of all physicians applying for commissions in order to select from them all who had had any experience in laboratory work, as shown by their questionnaires. But even if all of these men had been released for laboratory duty the number would still have been very insufficient to carry on the work. It became necessary, therefore, to establish laboratory training schools for officers and enlisted men, for a like necessity existed respecting the latter.

The Army Medical School, in addition to concentrating its regular course into a shorter period, increased its capacity for training students by adding to its curriculum special courses for laboratory men, both commissioned and enlisted. A special laboratory school was established at the laboratory of the Central Medical Department, Fort Leavenworth, Kans.[5] This school, which soon became the most important one, was transferred on August 1, 1918, to buildings at New Haven, Conn., offered by Yale University.[6] The university erected for this school a temporary laboratory building at a cost of $40,000, in addition to opening most of the dormitories for barracks. A training school and auxiliary laboratory was also established at the Rockefeller Institute, and such members of the personnel of that institute as were necessary to do the Army work were commissioned or enlisted in the Army.[7]

Until the transfer of the Leavenworth school to New Haven, Conn., laboratory units for overseas service were formed at the Army Medical School, at the Rockfeller Institute, and at the laboratory at Fort Leavenworth. Thereafter all laboratory units were organized at the New Haven school and held there until orders were received for overseas transportation. This change was of value and greatly facilitated the handling of personnel. The officer in command of that institution, having during his entire service specialized in scientific work and having for several years been a member of the faculty of the Army Medical School, understood the requirements of the laboratory service and relieved the division of the selection of personnel—always so hard to accomplish with only data and names available. Furthermore, a training school in laboratory work was established at the Medical Officers' Training School, Camp Greenleaf, Fort Oglethrope, Ga., and training courses were carried on in the laboratories at most of the camps, that at Camp Devens, Mass., being one of the most active in this direction.[8]

The organization of the Sanitary Corps[9] offered an additional opportunity to obtain men already trained in laboratory procedures. While such men did not hold the degree of doctor of medicine, many of them were highly skilled in both chemistry and bacteriology. Some of them were commissioned directly in the Sanitary Corps, while others were inducted as enlisted men, subsequently trained in the schools, and then, if found suitable, commissioned on graduation or sent out as laboratory technicians in enlisted grades.

In the early fall of 1917 the outbreak of large numbers of cases of measles, many with subsequent pneumonias, and the occurrence of rather numerous cases of meningitis, made it evident that all the measures which had been taken would be inadequate to furnish the laboratories with sufficient trained personnel. Therefore, with the aid of the Medical Division of the National Research Council, 10 schools were established and courses were standardized for training nonmedical women as laboratory technicians.[10] The principal schools so concerned were the Rockefeller Institute, where training courses in chemistry and bacteriology had already been established for officers and enlisted men; the New York City Board of Health; and the Massachusetts Institute of Technology.

The following table indicates the movement of laboratory personnel during the last five months of 1918, previous to which time no accurate records are available.[11]

	August.	September.	October.	November.	December.
Overseas	470	536	636	665	768
Schools of instruction	250	321	314	315	248
General hospitals, post hospitals, base hospitals, Army Medical School, and Army Medical Museum	484	345	423	466	492
Ports of embarkation	37	50	52	54	66
Surgeon General's Office	6	7	10	11	11

At the end of November, 1918, the following personnel were on duty in the laboratory service; Medical officers, 945; Sanitary Corps officers, 405; female technicians, 398; contract surgeons, 6.[11] Of the trained personnel numbering 1,335, 766, or 57.4 per cent, had been sent overseas. Many more were designated for overseas service and had been separated from home units but did not proceed because of the signing of the armistice. The number of trained personnel sent overseas was augmented there by the Laboratory Division of the expeditionary forces through the addition of officers, already in Europe, who had had laboratory training, and through additional training to officers not so qualified.

The need for so large a personnel may be appreciated by studying the following detailed tabulations of the work of the laboratories during the busiest period, from the laboratory standpoint, of our participation in the war.[12]

Certain base hospital laboratory examinations during the months February to June, inclusive, 1918.

	Jackson.	Taylor.	Dodge.	Pike.	Travis.	Lewis.
Urinalyses	2,670	3,334	2,389	1,181	2,675	1,244
Blood counts	800	(1)	1,199	422	1,314	465
Malaria	619	(1)	40	183	108	(1)
Blood cultures	89	(1)	50	64	103	97
Sputum for tuberculosis	451	396	696	365	607	397
Urethral smears	228	(1)	860	(1)	(1)	353
Cultures for Klebs-Loeffler	13	(1)	4,681	4,017	(1)	789
Cultures for meningococcus	3,171	(1)	1,950	951	12,431	2,115
Typing for pneumococcus	103	42	38	119	731	67
Feces for ova	3,638	3,742	743	56	168	452
Wassermanns	1,422	407	623	276	583	398

[1] Report tabulated in a manner that does not permit calculation of this figure in all cases.

Tabulation of laboratory examinations for month of March, 1918 (57 laboratories).[13]

Examinations.	Number.	Examinations.	Number.
Urinalyses	56,877	Renal function	611
Blood counts	16,725	Wassermann, cerebrospinal fluid	160
Malaria	1,907	Complement fixation, gonococcus	127
Blood grouping	53	Complement fixation, glanders	304
Widals	70	Miscellaneous cultures	1,298
Gastric contents	801	Water, bacteriological	832
Feces, for ova	32,453	Milk, bacteriological	872
Sputum, for tuberculosis	8,763	Foods, bacteriological	77
Dark-field examinations	714	Autopsies	271
Urethral smears	5,748	Histological examinations	492
Miscellaneous smears	1,130	Gross specimens preserved	14
Cerebrospinal fluid, cell counts	1,146	Special chemical examinations	47
Cerebrospinal fluid, colloidal gold	31	Miscellaneous examinations	2,887
Blood cultures	1,377	Autogenous vaccines prepared	167
Pneumoococcus typing	2,607	Typhoid vaccines given	9,275
Nasopharyngeal cultures, meningococcus	75,204	Smallpox vaccinations	2,796
Nasopharyngeal cultures, streptococcus	2,922	Serum treatments given	254
Pleural fluids	915	Rabies treatments	14
Urine cultures	1,943	Shick tests	1,215
Urine, pneumococcus precipitin	141	Catheterized urine	33
Feces, cultures	4,475	Wassermann, blood	14,689
Nasopharyngeal cultures, Klebs-Loeffler	41,313		

After the 1st of December, 1918, the effect of demobilization became apparent and on January 2, 1919, the total laboratory personnel was 1,493; February 1, 1,333; November 1, 1,279; April 1, 1,194; May 1, 1,130; June 1, 908; July 1, 836.[13]

During 1918 the laboratories of the camp base hospitals were urged to cooperate in the training of both officers and enlisted men for overseas duty, while the classes at the Army Medical School and Yale Laboratory School at New Haven, Conn., had over 600 enlisted men in training as technicians, some of whom would have been qualified later for commissions in the Sanitary Corps. The arrival of a liaison officer from the Central Medical Department Laboratory, American Expeditionary Forces, in September, 1918, materially aided in the standardization of the courses, so that officers and men might be better trained for the duties they would have to perform in France, and also aided in the standardization of equipment for mobile or transportable laboratories to be sent over for field work.

During the influenza epidemic in 1918 the laboratory schools were practically closed, as it was necessary to send the students to duty in camps and civil communities because of the scarcity of physicians.

In the Army hospitals a step forward was made when the office of chief of the laboratory service was made coordinate in standing and authority with those of the chiefs of the medical and surgical services. Prior to this many young men, finding promotion impossible in the laboratory, had left it for clinical work in medicine and surgery. This was now changed so that a laboratory man might still work in his special line and yet be promoted.

During the year 1918 arrangements were made for the instruction of medical officers in pathology at St. Elizabeths Hospital, Washington, where an average of 600 autopsies are performed yearly, and also at the Brady laboratories of the New Haven Hospital.[14] At the latter pathological technicians were also trained and a considerable number were distributed to hospitals in this country and abroad. Some received further instruction in neuropathology at the Army Medical Museum and were then sent to hospitals for the treatment of nerve injuries.

At no time during the war was there a sufficient number of trained pathologists in the service. In spite of efforts to train additional men by the arrangement of special courses of instruction, the number of qualified pathologists could not be greatly increased during the war. The same condition seemed to exist in civil life, for it proved impossible to find a sufficient number of trained men. It was evident that something was needed to make the calling of pathologists more attractive than it had been in the past.

CONSTRUCTION.

At the outbreak of the war, through cooperation between this division and the Construction Branch of the Hospital Division, plans were drawn for the laboratories of the various hospitals to be constructed throughout the country, while additions were planned to the laboratories already available in permanent Army hospitals. These camp laboratories, planned for camps of 10,000 men, with a hospital bed capacity of 500, sufficed during the summer of 1917, when the ingress of troops was not particularly rapid and the season was that of least prevalence of the respiratory group of diseases. When fall came drafted troops began arriving in camp in large numbers, and as the rate for respiratory infections increased coincidently, it soon became evident that the camp hospital laboratory facilities would have to be increased. Additional space was obtained by taking over the entire wing of a building which had been shared previously with the eye, ear, nose, and throat department by nearly doubling its length and by building independent animal houses. The laboratory space thus provided was found to be adequate except in some of the largest camps, where the total strength ran over 50,000 troops. For these camps, which did not reach their maximum capacity until the latter part of the war, plans were developed for the construction of independent laboratory buildings. Because of the cessation of hostilities only a few of these were contructed. That at Camp Mills was found to be adequate for its purpose.

SUPPLIES.

Prior to 1914 a very large percentage of the supplies for technical and laboratory work had been obtained by the United States from the German and Austrian manufacturers. This source of supply was to a large extent cut off in 1914, but reserve stocks in bonded warehouses in this country served for most ordinary purposes up to the time of our entry into the war, when this reserve had become practically exhausted. American manufacturers, by this time, had taken up, to a certain extent, the manufacture of chemicals hitherto obtained abroad, and authority to manufacture certain articles under German patents was held by American branches of German concerns; but the manufacturers of such materials in this country were in no way prepared to meet the tremendous demand for supplies of technical apparatus made necessary by our entry into the war. Furthermore, these had increased in number and variety through recent advances in technical procedures. At the outset of the war the Council of National Defense, working in conjunction with the War Industries Board, prepared lists of supplies for the purpose of standardization of technical equipment and material for the Army.[15] The approved articles were placed on the manufacturers' priority lists for materials by the

War Industries Board, and their manufacture was begun. It soon became apparent, however, that for the more technical procedures of absolutely necessary laboratory work, entirely new types of products, in quantities hitherto unthought of, must be supplied. A revised list of laboratory supplies, therefore, was prepared by this division in conjunction with the officer in charge of the field medical supply depot in Washington, and this was distributed to the manufacturers and to the service.[16] Adequate supplies of such material were not available for issue until the middle of 1918.

It had been the Army practice in the past to carry stocks of all ordinary supplies, including laboratory material, in the various medical supply depots and to supply the posts from the nearest supply depot.[17] Certain supplies were habitually purchased by officers in charge of the supply depots nearest the source of supply. This method continued during the early part of the war, but it soon became apparent that any officer whose duty it was to handle laboratory supplies must also have such special knowledge of laboratory material as was obtainable only by having worked with the material in question. Only one such officer was in charge of a supply depot. This depot was in Washington. This officer, at the beginning of the war, was on the faculty of the Army Medical School in the Laboratory Division, and was thoroughly familiar with all types of laboratory apparatus. On duty with him were men who, in the early months of the war, had been trained under his direction in the handling of laboratory material. It was decided, therefore, to concentrate laboratory supplies at the Washington depot.[18] This action was the more essential from the necessity of furnishing the American Expeditionary Forces a standard transportable laboratory equipment in chests, which, replacing the inadequate field laboratories of the period before the war, would be adequate for all ordinary laboratory procedures.

Three laboratory cars, *Metchnikoff*, *Reed*, and *Lister*, were purchased through the Red Cross and were utilized throughout the war. They were found to be extremely valuable for emergency work, proving superior in this respect to any other mobile or transportable laboratory then available, and were thus very satisfactory agencies in the control of epidemics of infectious diseases in situations where no well-equipped laboratory was on the ground.

STANDARDIZATION OF TECHNIQUE.

At the very beginning of the work of the division, it seemed advisable to institute measures which would result in standardizing the technique used throughout the laboratories of the Army to such a degree as would make results from different parts of the country comparable, but at the same time to allow individual officers to use their own ingenuity and any particular ability they might possess to simplify accepted procedures, and to elaborate new methods which might be found of value in diagnosis and treatment. By way of standardization, the officers of the Rockefeller Institute published Monograph No. 7 of that institution on the subject of "Acute Lobar Pneumonia, Prevention and Serum Treatment." This monograph which, at that time, was the last word on the diagnosis and treatment of pneumonia, contained detailed descriptions of the necessary laboratory technique. Early in 1917, a monograph, entitled "Mode of Infection, Means of Prevention, and Specific Treatment of

Epidemic Meningitis," was published by the same agency on request of the Surgeon General. At a somewhat later date, following a conference with the Surgeon General, a standard technique for the isolation of the meningococcus was adopted and pamphlets describing this procedure were distributed.[19] Following another conference a similar circular was distributed describing the technique for isolating the types of streptococci.[19] These standard methods were adopted by the Army, the Navy, and the United States Public Health Service and by the majority of civil laboratories.

During the same period, and continuing throughout the year 1917, data were gathered together for a laboratory manual to be distributed throughout the service and to cover, in a sufficiently comprehensive way, the technique of the more important procedures to be used in laboratory diagnoses.[20] That this volume might contain the generally accepted methods of procedure in laboratory diagnosis, men who had specialized in each branch of laboratory work were requested to submit what they considered the proper technique for the procedures with which they were most familiar. Its value was apparent, and the rapid changes which had occurred between the time the manuscript was sent to the printer and the publication of the completed work made it advisable to prepare at once a second edition. From time to time, as new methods of laboratory procedure were developed and their value demonstrated reprints of articles describing them were distributed throughout the laboratories of the service, while circulars describing recent advances and suggesting methods of procedure were occasionally sent out from the Surgeon General's Office.

SECTION OF INFECTIOUS DISEASES.

SPECIAL DISEASES.

Pneumonia.—Until the first increments under the draft act began to come into the Army, infectious diseases played only that minor rôle which might be expected from a relatively slow and constant increase in the regular forces. While voluntary enlistments came from all sections of the country, the larger number of these were necessarily from the centers of population where the average inhabitant had already been exposed to the ordinary infectious diseases of childhood. In the fall of 1917, at the beginning of the entrance of drafted troops, infectious diseases, particularly measles and mumps, appeared in epidemic form almost simultaneously at all camps, while at the same time the capacity of the individual camps, because of the contemplated changes in organization, was trebled. Pneumonia, following measles and occurring independently, became at once the chief cause of concern and of increased incidence and death rates. It became apparent at this time that an enlargement of the laboratory facilities, both as to size, material, and personnel, was necessary. Reports from the various laboratories indicated that streptococci of hemolytic type were playing a prominent rôle in the pulmonary infections. In order that the laboratories might be better prepared to combat these diseases and that their nature might be more fully determined, in February, 1918, the Surgeon General sent a commission to Texas to study pneumonia from the clinical, bacteriological, and pathological aspects.[21]

Among other work done, the clinical and pathological characteristics of the pneumonia associated with the streptococcus hemolyticus were analyzed.

The pathology of this form of pneumonia, for which the name "interstitial bronchopneumonia" was chosen, was described and the association of the hemolytic streptococcus, with the pathological conditions which obtained, was demonstrated. A technique was then elaborated for the isolation and identification of this organism from the sputum, nasopharynx, or other sources. The pathology found in these cases was described and published in Monograph No. 10 of the Rockefeller Institute (1919).

On May 20, 1918, a board of medical officers was appointed, by order of the Secretary of War, for the purpose of making investigations as to the nature, causes, prevention, and treatment of pneumonia and its complications in the various camps within the limit of the United States, this board to report from time to time to the Surgeon General of the Army.[22] Many conferences were held by the board, one of the more important being with a group of pediatrists, at which the management of measles and its sequelæ was considered. It also reviewed data, obtained from various divisions of the Surgeon General's Office, on the subject of pneumonia and its sequelæ. Methods were considered for the earlier diagnosis and isolation of pneumonia. As a result, groups for the special study of pneumonia were sent to camps where the disease appeared to be especially prevalent, so that it might be studied more intensively and that further trials of the prophylactic vaccination against it might be made.

An experiment on prophylaxis was made at Camp Upton, where about half of the 77th Division was inoculated with a saline pneumococcus vaccine, containing Types I, II, and III.[23] During the 10 weeks that elapsed between the completion of this vaccination and the departure of the troops, not a single case of pneumonia of these three types occurred among the vaccinated men, while its incidence among the unvaccinated was higher than during the corresponding period preceding the vaccination.[23] This was deemed a sufficiently strong confirmation of Lister's findings in South Africa [24] to warrant an extension of the use of this prophylactic measure.

A group of officers practiced the use of prophylactic vaccination on incoming troops at Camp Wheeler, Ga., during September, 1918. However, the appearance of influenza in epidemic form interfered materially with obtaining results from which accurate conclusions might be drawn. During the winter of 1918 and 1919, this group of officers continued their investigations on pneumonia from the experimental standpoint at the laboratories of the Army Medical School. The results of their investigations have materially advanced our knowledge on the pneumonias.[25]

Empyema.—During the latter part of February, 1918, reports began to come to the Division of Laboratories and Infectious Diseases on numerous cases of empyema following the pneumonias which had occurred during the preceding months. In March a medical officer was sent to Camp Lee, Va., where he, with officers from the Divisions of Medicine and Surgery, made an intensive study of these cases. Results of their investigations furnished valuable information regarding the treatment of empyema, particularly in respect to the necessity for maintaining a diet of high caloric value. An empyema commission [26] was created, whose studies continued throughout the remainder of the war and for sometime after the armistice.[26]

Sputum-borne diseases in general.—In July, 1918, a board of officers was ordered to Camp Funston, Kans., to study respiratory diseases at that place.[27] The investigations indicated the constant presence of influenza bacillus carriers there, and also that there had been an epidemic of this disease at Camp Funston in the spring of 1918. On September 1 this group of officers was ordered to Camp Pike, Ark.,[28] and a laboratory car was then sent there as additional equipment. Arriving, as they did, before the outbreak of the influenza epidemic, they were able to study the respiratory infections at Camp Pike as they had at Camp Funston; they were present at Camp Pike during the entire influenza epidemic.

The enormous amount of work thrown on the laboratory force during the influenza epidemic made intensive study of this disease, except by the special groups above mentioned, practically impossible. Large numbers of specimens, however, were collected and sent to the Army Medical Museum, where the study of the pathology of the disease was continued.

Meningitis.—In the fall of 1917 cases of meningitis began to appear. The examination of contacts and other personnel for carriers showed the percentages of carriers to vary in the different camps. This variation appeared to depend on the laboratory technique employed as well as on the location of the camp concerned. Standardization of laboratory procedures at this time proved of extreme value in determining the true carrier percentage throughout the Army. It was soon discovered that the carrier incidence was higher in camps where the civilian incidence in the localities from which the troops came was the highest.[29] This was particularly true for Camp Jackson, S. C. The fear which naturally prevailed when the high carrier percentages were revealed at certain camps sometimes led to the making of carrier surveys of the total personnel of some camps. This resulted in throwing an enormous amount of difficult technical work on the laboratories at those places. Immediately it was necessary to augment markedly the personnel of camp laboratories, to simplify the laboratory procedures, if possible, and to conduct investigations to determine whether such enormous numbers of meningitis examinations were necessary. The work of the chief of the laboratory at Camp Jackson, who used a special technique, seemed to indicate that the percentage of carriers was even higher than any previously reported figures had indicated, in some cases running as high as 60 per cent of an organization.[29] More detailed studies of the organisms found in carriers were then made. These indicated that a large percentage of these carriers were in all probability harmless, and investigations carried out, both in the absence and presence of epidemics, indicated that only occasionally were they responsible for the transmission of the disease.[29]

During the latter months of the war experience seemed to indicate that on the occurrence of a case of meningitis the rational procedure was to culture immediately close contacts and to extend the culturing to others only when it seemed, either from lack of evidence convicting a contact or from the occurrence of other cases of the disease caused by the same type of meningococcus, that the focus of infection was outside of the first immediate contact group. It can not be said, however, that this was the universally accepted opinion of all laboratory workers; many still believed that the only safe way to control meningitis was to culture the entire camp personnel and to isolate all carriers, treating the latter for the eradication of the carrier condition irrespective of the type of meningococcus found.

Anthrax.—In March, 1918, a soldier developed anthrax while on a transport en route to Europe.[30] The lesion was in the shaving area on the neck. Examination of 15 shaving brushes used by the troops on this transport resulted in the finding of anthrax spores in all the six brushes first examined. Later, from overseas, 14 men were reported with anthrax in the shaving area on the face or neck. All but three had developed the condition while on the same transport. Of the 14 patients, five died.[30] Shaving brushes from the organizations of three of these men on bacteriological examination showed the presence of anthrax spores. In this country the first case in troops occurred at Camp Taylor, Ky. This was in April, and up to June 30, 1918, 20 individuals in the Army in the United States developed anthrax, the lesion in every case being on the face or neck. Among these 20 patients there was one fatality.[30]

Methods for the disinfection of shaving brushes were tested, that finally adopted being a four-hour immersion in a formalin bath at a temperature of 110° F.[30] A circular calling attention to the necessity for the disinfection of shaving brushes and outlining the proper methods was distributed to all commands.[31] Subsequently, the manufacture of shaving brushes throughout the country was investigated at the instance of the Surgeon General. This investigation was made by the United States Public Health Service, and a list of manufacturers prepared who provided for adequate sterilization of their product.[30] This list was distributed to all commands in order that unnecessary disinfection of brushes might be avoided. The Public Health Service also added an amendment (No. 6) to the interstate quarantine regulations of 1916, to prohibit the interstate transportation of shaving or lather brushes manufactured under insanitary conditions, likewise including anthrax among diseases regarded as contagious and infectious, for the purpose of interstate quarantine.[30] Subsequent to the adoption of the measures mentioned above, no further cases of anthrax were traceable to shaving brushes, nor was the number of cases of this disease reported sufficient to bring the matter up for further action.

Gas gangrene.—In June, 1917, the discovery was announced by the Rockefeller Institute of a true toxin for *B. welchii* (*perfringens*).[32] This toxin, upon injection into laboratory animals and horses, had been found to result in the production of a potent antitoxin. Several horses were placed under immunization at once, and in December, 1917, the application of this serum to the treatment of gas gangrene was commenced in France. Before this method was employed by the British at the front the toxin, the antitoxin, and the protective power of the antitoxin were demonstrated in London to the British Royal Army Medical Corps, and, as a result, a large scale production of antitoxin was at once begun in England.[32]

Subsequently, it was decided by the central laboratory of the American Expeditionary Forces that the gas gangrene serum might better be used prophylactically and in conjunction with tetanus antitoxin. Furthermore, the work of French investigators had shown that gas gangrene was not caused exclusively by *B. wehchii*, but that the *Vibrion septique* (*B. edematis maligni*) was a frequent complicating factor. This organism also produced a true toxin. It was therefore considered necessary to produce as rapidly as possible a double serum, and ultimately a triple serum, tetanus-Welch-septique, these combinations to replace at the earliest possible time the tetanus prophylactic injections which were then given to wounded. Facilities for this being lacking in France, the immunization of tetanus-immune horses with the toxins of *B. welchii* and *Vibrion septique* was initiated in the United States.[32]

Quantity yields of the double serum were beginning to be secured in September, 1918, and considerable quantities were shipped to France.[33] This serum was beginning to be used in the period just preceding the armistice, but because of the brief period of time during which it was actually used, its value as a prophylactic measure could not be determined. The conclusion of the armistice stopped this work.

Miscellaneous activities.—The proper sterilization of surgical catgut became a matter of considerable importance early in 1918, as the demand increased and new sources of supply were developed. A standard method of sterilization and of sterility tests were finally agreed upon, and the catgut situation at the end of the year was satisfactory.

Measles investigations were carried out on volunteers at Camp Devens, Mass., and Camp Meade, Md., but all attempts to reproduce the disease by the inoculation of volunteers with blood from measles patients were unsuccessful.[34] It was hoped that opportunities for additional investigations in this line would occur, since during the war measles was one of the most important diseases which the medical officer was called upon to control, but this did not prove to be the case.

Studies on the prevalence of hookworm and other intestinal parasites were carried out at most stations in the Army, but more especially in the South, particularly at Fort Sam Houston, Tex., and at the port of embarkation, Hoboken, N. J.[35] At the latter, comparative studies were made which showed a much higher percentage of infection with intestinal parasites among troops returning from overseas than among men who had not been out of this country.

SECTION OF UROLOGY AND DERMATOLOGY.

With the idea of using all preventive aids and of applying modern scientific methods to the cure of venereal diseases, the Surgeon General appointed a committee of specialists versed in genitourinary diseases and syphilis to act as advisers to the chief of the division.[36] One member of the committee remained on duty in the Surgeon General's Office continuously and the entire committee met for a discussion of new phases of the work as they presented themselves. The first task of the committee, on its organization, was to prepare a program of attack against venereal diseases, one member being placed in charge of the department of prevention, the department of treatment being undertaken by the committee as a whole. With a view to standardizing treatment, the committee prepared a manual for the use of all medical officers, giving a brief summary of existing knowledge on the subject.[37]

The next task of the committee was to select personnel to take charge of the venereal work in the camps. The applications of doctors seeking commissions in the medical service were looked over and their qualifications reviewed, then they were classified and graded according to experience and professional standing. In assigning such officers to duty, the rule was to send one experienced genitourinary specialist and one or more younger men as assistants to every base hospital and to every large camp. In the base hospitals, urological surgery, venereal diseases, dermatology, and syphilis were combined in one department under one chief. As the number of men with adequate training was found to be insufficient for filling all the positions, it was judged expedient to create an opportunity for the postgraduate instruction of younger men who might elect to work in the genitourinary section, in urology and venereal diseases, syphilis, and dermatology. To this end postgraduate schools for medical officers were established at the postgraduate school at Columbia University, New York, in connection with the Harvard Medical School, and in St. Louis.[38] Later on, these schools were discontinued and all postgraduate courses in urology and venereal diseases were concentrated in the Medical Officers' Training Camp at Camp Greenleaf, Fort Oglethorpe, Ga., so that men entering the service could receive military training and instruction in specialties at the same time.[39]

While gonorrhea and syphilis of the ordinary types constituted by far the majority of the cases in the camps, there was always a fair number of other cases requiring experts in urology or dermatology, and an important part of the duty of the committee consisted in supplying such experts as the Army increased in size.

The committee sent out at various times different circulars to medical officers in camps and posts giving advice, suggestions, and instruction. Special inspection trips were made by members of the committee from time to time as emergencies arose. In the early summer of 1918, every camp in the country was inspected by a member of the committee in order that he might ascertain personally the actual conditions which obtained in regard to genitourinary and venereal diseases.

Facilities were provided for the prompt application of venereal prophylaxis, and punishment by court-martial was insisted upon for delinquents. The results were apparently satisfactory.

In order to combine the treatment of venereal diseases by medical officers with the military training of recruits by line officers, development battalions were formed in which venereal patients were grouped and treated in venereal infirmaries.[40] The number of cases of venereal disease among selective-service men finally became so large that in August, 1918, plans for special dispensary in the development battalion of each camp were prepared.[40] In order to avoid constructing new buildings and to use existing structures to the best advantage, these plans contemplated modifications of the standard two-story barracks to meet the needs of a venereal dispensary. At the same time, a full set of instruments and other equipment for the treatment and diagnosis of venereal diseases were furnished. For some time prior to this, officers had been under training in urology and venereal diseases at the special schools in Boston, New York, St. Louis, and at Fort Oglethorpe, and a large number of these officers were now detailed for duty in these dispensaries. It was not uncommon for as many as 2,000 cases a day to be treated in one dispensary.

In 1918, in the opinion of the consultants in this office, the experience of the venereal disease service justified a new issue of the "Red Book," or Manual of Treatment of Venereal Diseases, first published early in 1917. The second edition was published in 1918, and distributed to all urologists in the service. The publishers (American Medical Association) reported a large demand for the book among the civilian profession, and early in 1919 a third edition was prepared and published for civil use and for the benefit of the United States Public Health Service, which adopted the manual for use in its own hospitals and in those aided or supervised by it.[37]

While the arsphenamine manufactured in this country soon became fully as good as the product formerly obtained from Germany, nevertheless deaths were reported from time to time following its use. In cooperation with the Army Medical School and the hygienic laboratory of the Public Health Service, it was arranged to raise the permissible minimum lethal dose for small animals to about double that shown by the German salvarsan in this country at the outbreak of the war. The manufacturers willingly complied with this request, and early in 1918 the arsphenamine situation was more satisfactory, both as to quality and quantity of the drug, than it had ever been before.

SECTION OF VENEREAL DISEASE CONTROL.

The campaign against venereal diseases which was initiated in 1909, and which was vigorously carried on in succeeding years by the military authorities, was continued during the war under the direction of the Section of Venereal Disease Control, which was closely correlated with the section for the treatment of genitourinary and dermatological cases.[41]

A special committee, which consisted of the administrative personnel of these two sections, was appointed to advise the officer in charge of the division on the subject. This committee prepared and distributed widely throughout the United States a program of attack on venereal diseases. The methods advised were summarized under four headings:[41] (1) Social measures to diminish sexual temptations; (2) education of soldiers and civilians in regard to venereal diseases and the moral hazards related thereto; (3) early treatment (or prophylactic measures) against venereal diseases; (4) medical care of the infected.

It was proposed to correlate these four major lines of attack with the Laboratory, Sanitary Inspection, Hospital, and Reconstruction Divisions of the Surgeon General's Office, on one hand, and on the other with the War Department Commission on Training Camp Activities and the welfare organizations authorized by the War Department (see p. 541 et. seq.) and with the United States Public Health Service.

The section regarded the solution of the problem of safeguarding the morals and health of soldiers required two groups of measures:[41] (1) For the protection of the drafted man while he is still at home, before being called to the colors, and while he is en route to his military station; (2) for the protection of the soldier at all times while in the military service until final "muster out."

The work of the section was devoted largely to planning and carrying out, directly or in cooperation with other departments or civilian agencies, measures applicable to each of these phases.

Its program was broad and, in order to make it effective, personnel and equipment were necessary. At the time, no one branch of the Army was financed, organized, or prepared to carry out this complex program, so different agencies were charged with the execution of different phases of the work. When completely organized, the special committee on the subject functioned through the following agencies, some of which were subdivided into several sections for administrative purposes:[42] (1) Social hygiene division; (2) law-enforcement division; (3) division of athletics; (4) music; (5) dramatics; (6) post exchange committee; (7) theater division.

Through the organizations affiliated with the War Department and through funds made available by still another organization (The American Social Hygiene Association), funds for personnel, equipment, supplies, and other expenses incidental to the program were forthcoming and were used to supplement and enlarge the work provided for by government appropriation. The details of this work will appear in full in the volume dealing with the scientific aspects of venereal disease control.

On December 9, 1918, the total personnel assigned to the section combating venereal disease was as follows:[43]

Activity.	Commissioned officers.		Enlisted men.
	Medical Corps.	Sanitary Corps.	
Surgeon General's Office:			
For duty	3	4	4
Special duty		5	
Prophylaxis			56
Educational work	6	7	51
Law enforcement		39	16
Detached service	2		
Total	11	55	127

This represents the maximum number of officers and men assigned to duty with the section, though a larger personnel was authorized shortly before the signing of the armistice.

The following equipment was purchased by requisition on War Department funds appropriated for the Commission on Training Camp Activities:[43]

Ten stereomotorgraphs (appropriated for the Commission on Training Camp Activities).

Five stereopticons.

Eleven copies of the film entitled "The End of the Road."

Five copies of film entitled "Fit to Win" (about 20 copies of "Fit to Win" were purchased from supplemental funds or acquired otherwise).

In addition, the American Social Hygiene Association loaned, for the period of the war, about 40 stereomotorgraphs, 20 stereopticons, and several thousand lantern slides, as well as other material developed by this association for educational purposes.

Statistical summary of the educational activities, section of venereal disease control, for the year ending June 30, 1919.

Attendance at lectures	2, 196, 700
Attendance at showings of film "Fit to Win"	900, 000
Attendance at showing of film "End of the Road"	256, 400
Number of pamphlets distributed	8, 693, 600
Number poster sets (Nos. 4, 8, 9) distributed	3, 030
Number of posters distributed (Nos. 10, 11, 12, 13)	11, 806

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Russel, F. F., Col., M. C., chief.
Siler, J. F., Col., M. C., chief.
Callender, George R., Lieut. Col., M. C., chief.

Ashburn, Percy M., Col., M. C.
Vaughan, Victor C., Col., M. C.
Zinsser, Hans, Col., M. C.
Clark, H. C., Lieut. Col., M. C.
Draper, George, Lieut. Col., M. C.
Duenner, R. H., Lieut. Col., M. C.
Garcia, Leon C., Lieut. Col., M. C.
Haskell, Clayton K., Lieut. Col., M. C.
Lanpher, Howard A., Lieut. Col., M. C.
Nichols, Henry J., Lieut. Col., M. C.
Snow, William F., Lieut. Col., M. C.
Bitterman, Theodore, Maj., S. C.
Cecil, Russell L., Maj., M. C.
Dunham, Edward K., Maj., M. C.
Hussey, Raymond G., Maj., M. C.
Johnson, Bascom, Maj., S. C.
Meads, A. M., Maj., M. C.
Murphy, James B., Maj., M. C.
Pearce, Richard M., Maj., M. C.
Sawyer, Wilbur A., Maj., M. C.
Shipley, A. E., Maj., M. C.
Soper, George A., Maj., S. C.
Thomson, A. M., Maj., M. C.
Walker, Warren, Maj., M. C.
Young, C. C., Maj., S. C.
Clarke, Walter, Capt., S. C.
Davies, Stanley P., Capt., M. C.
Eliot, Thomas D., Capt., S. C.
Foster, J. H., Capt., S. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Funk, Forrest J., Capt., S. C.
Gans, S. L., Capt., M. C.
Long, R. R., Capt., S. C.
Mankin, Harry A., Capt., M. C.
Palmer, George T., Capt., S. C.
Phillips, W. G., Capt., M. C.
Rice, F. W., Capt., M. C.
Russell, R. L., Capt., M. C.
Sawyer, Harold P., Capt., M. C.
Spingarn, A. B., Capt., S. C.
Sutton, Alan C., Capt., M. C.
Veeder, W. H., Capt., M. C.
Christensen, Frank, First Lieut., S. C.
Gehrke, August E., First Lieut., M. C.
Griffith, E. H., First Lieut., S. C.
Harkness, R. R., First Lieut., S. C.
Morgan, Sidney F., First Lieut., S. C.
Walker, R. M., First Lieut., S. C.
Wiseman, Mark, First Lieut., S. C.
Blosse, Nelson N., Second Lieut., S. C.
French, W. H., Second Lieut., S. C.
Morrison, Benjamin Y., Second Lieut., S. C.
McCann, Gertrude F., contract surgeon.
Taylor, Alonzo E., contract surgeon.
Young, Anna R., contract surgeon.

CONSULTANT.

Welch, William H., Col., M. C.

ROTATING ADVISORY COMMITTEE.

Politzer, Sigmund, Maj., M. C.
Pusey, William A., Maj., M. C.
Cunningham, John H., contract surgeon.
Hagner, Francis R., contract surgeon.
Morton, H. H., contract surgeon.
Wende, Grover W., contract surgeon.

REFERENCES.

(1) Annual Report of the Surgeon General, United States Army, 1918, 327.
(2) Office order, No. 97, S. G. O., November 30, 1918.
(3) G. O., No. 76, W. D., June 9, 1911; G. O. No. 134, W. D., September 30, 1911.
(4) Annual Report of the Surgeon General, United States Army, 1918, 328.
(5) Letter from Surgeon General to surgeon at Fort Leavenworth, Kans., August 2, 1917. Subject: Class at Department Laboratory. On file, Record Room, S. G. O., 129545 (Old Files).
(6) Correspondence. Subject: Medical Department of University for War Purposes. On file, Record Room, S. G. O., 324.3 (Tender of Services); 220.3 (New Haven, Conn.) (F); 353. (New Haven, Conn.) (F); 353 (Laboratory Instruction); and 700.7 (Yale Army Laboratory School).

(7) Letter from the Surgeon General of the Army to Dr. Simon Flexner, Rockefeller Institute, New York City, January 7, 1917. On file, Record Room, S. G. O., 151418 (Old Files).

(8) Correspondence. On file, Record Room, S. G. O., 353 (Laboratory, Camp Greenleaf) (C); 354.1 (Instruction Laboratory Specialists); 354.6 (M. O. T. C., Fort Oglethorpe, Camp Greenleaf.) (Similar numbers under Camp Devens, Mass.)

(9) G. O., No. 80, W. D., June 30, 1917.

(10) Correspondence on file Record Room, S. G. O., 231 (Laboratory Technicians).

(11) Compiled from weekly reports concerning personnel of Laboratory Division. On file, Record Room, S. G. O., Weekly Report Files.

(12) Annual Report of the Surgeon General, United States Army, 1918, 329.

(13) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1042.

(14) Ibid., 1043.

(15) List of Staple Medical and Surgical Supplies Selected to Meet War Conditions, by the Committee on Standardization appointed by the Council of National Defense. Part III, Laboratory Supplies, Council of National Defense, Washington, D. C., June, 1917 (Government Printing Office, 1918). On file, Finance and Supply Division, S. G. O.

(16) Laboratory Apparatus and Reagents, Proposed Revision, par. 846, Manual for the Medical Department, United States Army, 1916, Revised, February 15, 1918.

(17) G. O., No. 11, W. D., April 12, 1912, Par. V. Correspondence. Subject: Supply Depots of Territorial Departments. On file, Finance and Supply Division, S. G. O.

(18) List of laboratory supplies required for 1,000,000 to be purchased by Washington, December 31, 1917; letter from Surgeon General, United States Army, to the officer in charge, medical supply depot, New York, January 10, 1918. Subject: Purchase of Post Supplies. On file, Finance and Supply Division, S. G. O.

(19) Circular letter from the Surgeon General of the Army to the officer in charge of laboratory, December, 1917. Subject: Technique for Detecting Meningococcus Carriers. Recommendation of the committee on a standard routine method for the detection and isolation of hemolytic streptococci from throats, sputa, and pathologic exudates. Both on file Laboratory Section of Sanitation Division, 730 (Laboratory Technology).

(20) Medical War Manual No. 6, Laboratory Methods, United States Army. Compiled by Division of Laboratories and Infectious Diseases, first edition, 1918; second edition, 1919. On file. Finance and Supply Division, S. G. O.

(21) S. O., No. 21, W. D., par. 236, January 25, 1918.

(22) S. O., No. 111, W. D., May 20, 1918, par. 161.

(23) Report of hospital for the year 1918. From the commanding officer, base hospital, Camp Upton, N. Y., to the Surgeon General, United States Army, March 24, 1919. On file, Record Room, S. G. O., 319.1 (Base Hospital, Camp Upton) (D).

(24) Prophylactic Inoculations of Man Against Pneumococcus Infections, and More Particularly Against Lobar Pneumonia, by Lieut. Col. F. S. Lister, R. A. M. C. Memoir No. 10, South Africa Institute of Research, November, 1917, W. E. Horton & Co., Johannesburg, South Africa. Copy on file, Library of the Surgeon General, Washington, D. C.

(25) Results of Prophylactic Vaccination Against Pneumonia at Camp Wheeler, by Russell, Cecil, and Vaughan. On file, Board of Publications, S. G. O. Published in *Journal of Experimental Medicine*, 1919, xxix, No. 5, 457.

(26) Cases of empyema at Camp Lee, Va. Preliminary report by Empyema Commission. Reprinted from *Journal American Medical Association*, Chicago, Ill., August 3, 1918, lxxi, 366, and August 10, 1918, xxi, 443. Papers on Empyema, *Surgery, Gynecology, and Obstetrics*, 1918, xxviii, 337, 348, 362, 371, 375, and 379.

(27) S. O., No. 165, W. D., July 16, 1918, par. 252. Reports respiratory board. On file, Record Room, S. G. O., 710 (Camp Funston) (C). Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1033 and 1043.

(28) S. O., No. 203, W. D., August 29, 1918, par. 396. Preliminary report to the Surgeon General. Subject: Pneumonia Following Influenza at Camp Pike, Ark., by Maj. A. W. Freeman, Capt. F. G. Blake, Lieut. J. C. Small, Lieut. T. M. Rivers, and Lieut. Col. E. L. Opie. On file, Board of Publications, S. G. O.

(29) Correspondence and reports. On file, Record Room, S. G. O., 710 (Meningitis, Camp Jackson) (D); 721 (Camp Jackson) (D); 721.6 (Health Reports).

(30) Annual report of the Surgeon General, United States Army, 1918, 333; 1919, Vol. II, 1046. Correspondence. On file, Record Room, S. G. O., 710 (Anthrax).

(31) Circular letter from the Surgeon General, United States Army, to all camp and division surgeons of independent posts, July 2, 1918. On file, Historical Division, S. G. O.

(32) Annual Report of the Surgeon General, United States Army, 1918, 333; 1919, Vol. II, 1918, 1945. Report on production of anti-gas gangrene serum, Rockefeller Institute. On file, Record Room, S. G. O., 444.2–1 (Serums). Correspondence. On file, Record Room, S. G. O., 710 (Gas Gangrene), and 720.3 (Information Concerning Gas Gangrene). Toxin and Antitoxin of and Protective Inoculation Against *Bacillus welchii*. By Carroll G. Bull, and Ida W. Pritchett, *Journal Experimental Medicine*, July, 1917, xxvi, No. 1, 119, Baltimore, Md. Abstract on Gas Gangrene with Bibliography. *Review of War Surgery and Medicine*, March, 1918, Vol. I, No. 1, 17. (Prepared in the Office of the Surgeon General, United States Army, Washington, D. C.).

(33) Correspondence. On file, Record Room, S. G. O., 444.2 (A. E. F., France) (Y).

(34) Annual Report of the Surgeon General, United States Army, 1918, 53, 59, 164, 168, 285, 297, 332; 1919, Vol. II, 1312. Correspondence on file, Record Room, S. G. O., 720.3 (Inoculation, Camp Devens, Mass., Camp Meade, Md.) (D); 710 (Measles, Camp Devens, Mass., and Camp Meade, Md.) (D).

(35) Report on hookworm. On file, Record Room, S. G. O., 106177 (Old Files).

(36) Annual Report of the Surgeon General, United States Army, 1918, 334, 338. Correspondence. On file, Record Room, S. G. O., 156772 (Old Files) and 188331 (Old Files).

(37) Manual of Treatment of the Venereal Diseases, prepared under the direction of the Surgeon General of the Army. First edition, 1917; second edition, September 1, 1918; third edition, 1919 (Chicago, American Medical Association).

(38) Annual Report of the Surgeon General, United States Army, 1918, 335.

(39) Correspondence. On file Record Room, S. G. O., 352.4 (School of Urology, Camp Greenleaf) (C); and 353 (Camp Greenleaf) (C).

(40) Weekly report of section of venereal disease control, August 30, 1918. On file, Record Room, S. G. O., Weekly Report File.

(41) Annual Report of the Surgeon General, United States Army, 1918, 335, et seq.

(42) Ibid., 1919, Vol. II, 1059.

(43) Ibid., 1919, Vol. II, 1061 and 1062.

CHAPTER X.

DIVISION OF FOOD AND NUTRITION.

Early in the mobilization of the drafted Army, the Surgeon General, appreciating that proper feeding is an essential part of any complete program of military preventive medicine, took steps looking toward the formation of a division in his office which should be charged with the duty of advising on all questions relating to the nutrition of the soldier. Believing that the work proposed was clearly such as should be executed under the supervision of a purely professional department, with a personnel specially trained along the lines of nutritional science, the Surgeon General assigned to duty as Chief of the Division of Food and Nutrition a distinguished physiologist, who had been commissioned in the Sanitary Corps.[1] Other physiologists, biological chemists, food chemists, and food inspectors were commissioned and assigned to duty in the division.[2]

The work proposed was outlined in general terms in a memorandum submitted by the Chief of the Division of Food and Nutrition to the Surgeon General on September 19, 1917, which was embodied in a letter from the Surgeon General to the Adjutant General,[3] by whom it was submitted to the Secretary of War. The Secretary of War, on October 16, 1917,[4] gave formal approval to the proposals of the Surgeon General, which were promulgated by The Adjutant General:[5]

October 26, 1917.

From: The Adjutant General of the Army.

To: The commanding generals of departments, National Guard, and National Army Divisions, and the commanding officers of Coast Artillery districts, training camps, and excepted places.

Subject: Food surveys and inspections in training camps, cantonments, and hospitals of the United States Army.

1. The following letter on the above-stated subject from the Office of the Surgeon General, which has been approved by the Secretary of War, is communicated to you for your information and guidance:

"(*a*) There has been organized in this office a Food Division. The object of this division is primarily to safeguard the nutritional interests of the Army (1) by means of competent inspection of the food supplied to the camps with reference especially to its nutritional value; (2) by seeking to improve the mess conditions (cooking and serving of the food) with special attention to the matter of food economy, bearing in mind that palatability and proper cooking are great factors in determining the economical utilization of food in the physiological, no less than in the financial sense; (3) by studying constantly the suitability of the ration as a workingman's diet, to inquire whether it affords the proper amount and distribution of nutrients; what amount of variability there is, as between different mess houses of the same regiment and between different camps; the influence of weather conditions and of troop activities on the consumption of food. Any intelligent alteration of the ration from time to time must be based on facts, and it is the purpose of this division to get facts.

"(*b*) The most direct means of securing the information desired will be to conduct nutritional surveys of the camps both here and abroad. A survey party will consist of four commissioned officers of this division and of eight enlisted men who will serve as assistants and clerks. This party, with proper authorization, will go to a camp, report to the commanding officer, and under the guidance of the chief surgeon will make a thorough nutritional survey. One member of the party, who will act as its director, will be a thoroughly competent physiologist and physiological chemist. Another member of the party will be thoroughly familiar with the best methods of inspecting foods from the standpoint of nutritional value. While in the camp he will be able to instruct the mess sergeants in these methods: another will be able to instruct company cooks in the economical management of their kitchens; and a third will be able to give instructions to the company officers in the relative nutritional value of different foods and guide them in the construction of their menus. Such lessons and conferences, however, are secondary to the main purpose of the survey and will be subject to the pleasure of the commanding officer. The main purpose is to be able to describe in exact physiological terms the way in which the soldiers are fed, with a view to securing perfect nutrition at the least expense. It is estimated that one such party can complete the nutritional survey of a camp in from 10 days to 2 weeks. Each camp should be inspected at least once in two months.

"(*c*) Authority is requested to make the food surveys, as indicated in paragraph (*b*) hereof, in the several posts, camps, training camps, cantonments, and hospitals of the United States Army; authority for the travel of the individual officers and men composing a party to be requested in the usual manner.

"(Signed) C. L. Furbush,
"*Major, Medical Reserve Corps, U. S. Army*
"(For and in the absence of the Acting Surgeon General)."

By order of the Secretary of War:

(Signed) W. E. Cole,
Adjutant General.

[2d ind.]

720.1 (Miscel. Div.)
A. G. O., October 26, 1917, to the Chief of Staff.
1 incl.
Synopsis made.
Approved.
By order of the Secretary of War:

(Signed) Tasker H. Bliss,
General, Chief of Staff (*H. M. L.*).

The functions of the Division of Food and Nutrition, as exercised during the height of war activities, are shown in Chart XI.

INSTRUCTION OF PERSONNEL.

On account of the wide scope of their future duties, it was impossible to find candidates for commission equally at home in all fields. It was therefore deemed wisest to select men of good scientific training and to give each the necessary instruction to fill, as far as possible, the gaps in his previous experience. In order to accomplish this, officers were first ordered to report direct to Washington, where a series of lectures and practical demonstrations were given. The instruction in food spoilage was undertaken first by one of the staff of the Bureau of Chemistry. Through his efforts and those of the director it was possible for group after group of officers to visit the Museum of the Bureau of Chemistry and to study at first hand the various animal organisms. A member of the faculty of the Massachusetts Institute of Technology, who was later commissioned a major in the Sanitary Corps for service with the Division of Food and Nutrition, gave a number of lectures dealing with the causes and usual course of various forms of spoilage. Instruction in practical food inspection was given by a sanitary and food inspector, under the direction of the chief of the food-inspection service, District of Columbia. He conducted a number of parties through the markets and the various establish-

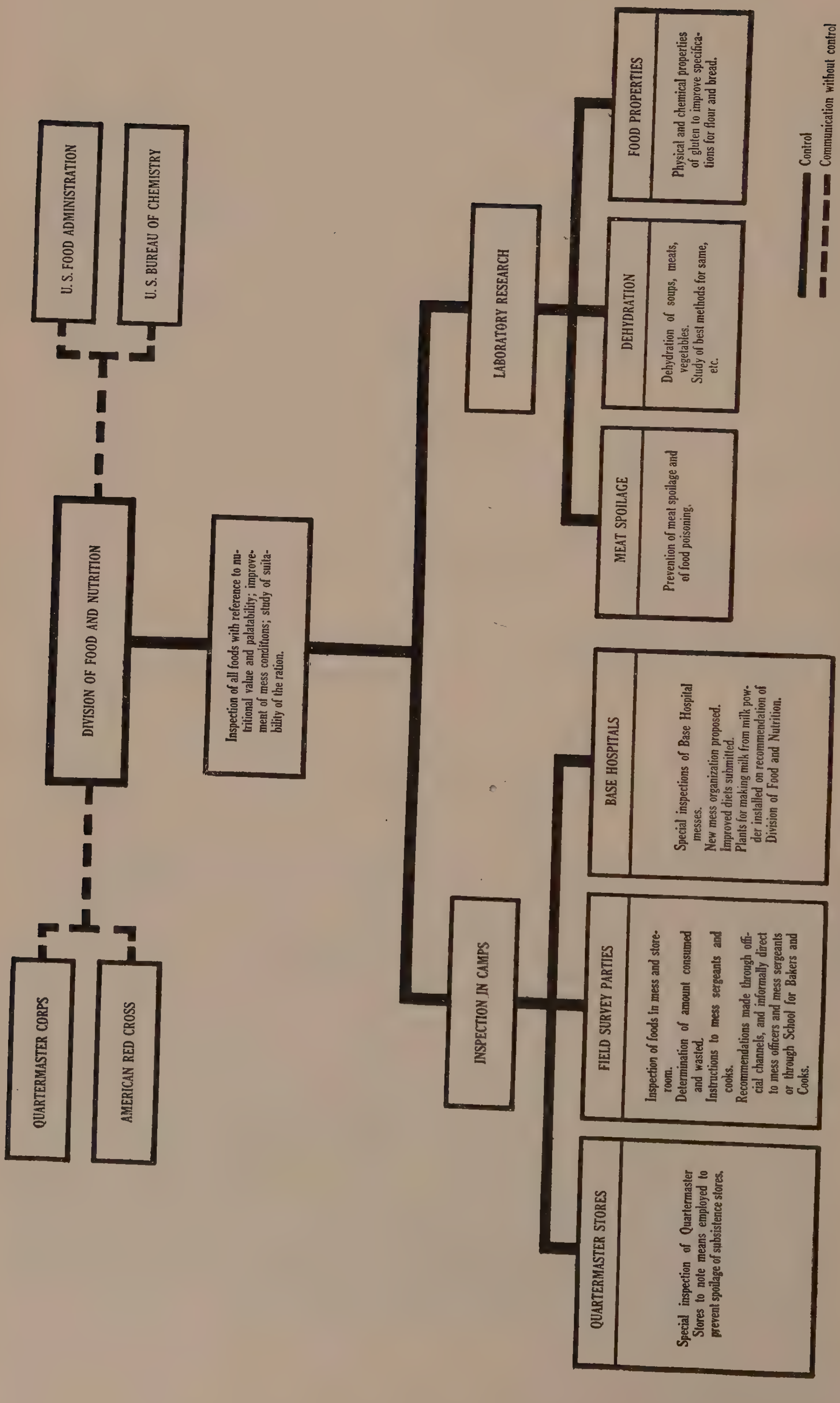
U. S. FOOD ADMINISTRATION
U. S. BUREAU OF CHEMISTRY
DIVISION OF FOOD AND NUTRITION
QUARTERMASTER CORPS
AMERICAN RED CROSS
Inspection of all foods with reference to nutritional value and palatability; improvement of mess conditions; study of suitability of the ration.
LABORATORY RESEARCH
INSPECTION IN CAMPS
FOOD PROPERTIES
Physical and chemical properties of gluten to improve specifications for flour and bread.
DEHYDRATION
Dehydration of soups, meats, vegetables. Study of best methods for same, etc.
MEAT SPOILAGE
Prevention of meat spoilage and of food poisoning.
BASE HOSPITALS
Special inspections of Base Hospital messes. New mess organization proposed. Improved diets submitted. Plants for making milk from milk powder installed on recommendation of Division of Food and Nutrition.
FIELD SURVEY PARTIES
Inspection of foods in mess and storeroom. Determination of amount consumed and wasted. Instructions to mess sergeants and cooks. Recommendations made through official channels, and informally direct to mess officers and mess sergeants or through School for Bakers and Cooks.
QUARTERMASTER STORES
Special inspection of Quartermaster Stores to note means employed to prevent spoilage of subsistence stores.
Control
Communication without control

CHART XI.—Division of Food and Nutrition, Surgeon General's Office, June, 1918.

ments manufacturing food products, explaining the many forms of spoilage likely to be met with, and demonstrating methods for their detection, at the same time pointing out the most approved precautions for protection from spoilage. Meat inspection and demonstration was undertaken by a representative of the Bureau of Animal Industry, with the cooperation of the acting chief of this bureau. A member of the staff of the laboratory of the National Canner's Association in Washington also devoted much time to the discussion of the various conditions arising in canning, and trips were made to Baltimore to study the practical operation of canners.

While this instruction served its purpose fairly well, it was adequate only in the case of particularly well-qualified men, such as the division was at first fortunately able to obtain; and even these felt the need for training in military forms and procedures. After considerable delay plans for the establishment of a special course at the Medical Officers' Training Camp, Camp Greenleaf, Fort Oglethorpe, Ga., were approved, and on March 7, 1918, the necessary instructions were given to the commandant in a letter reproduced below in part:[6]

> 1. A school for officers of the Division of Food and Nutrition, Sanitary Corps, will be established as part of the general scheme of instruction carried out in the Medical Officers' Training Camp, Fort Oglethorpe, Ga.
>
> 2. The purpose of this school is to conduct the training of these officers of the Sanitary Corps along military lines, from the military viewpoint and in the military environment; and coincidently to develop them physically and train them in subjects which they should know under the conditions under which they would practice their specialty, including organization, regulations, paper work, relations with enlisted men, and their general functions as officers.
>
> 3. About 20 graduate food experts of the Sanitary Division are required monthly.
>
> 4. The routine of all matters relating to food, messing, and nutrition in the various organizations at your camp will, so far as possible, be demonstrated and utilized as part of the subject of instruction.
>
> 5. The general technical instruction to be given will be related to matters having to do with food and nutrition, and is briefly outlined in this letter of instructions, viz.:
>
> *Special.*

	Hours.
Composition of foods	10
Fundamentals of mess cooking	15
Food inspection	20
Mess accounting	5
Mess management	10
Nutritional surveys	20
Total	80

> 6. A number of enlisted men will be kept at your camp under training to assist in food work. This number will be later announced.
>
> All should be given such part of the basic course for enlisted men at your camp as might be of advantage to them in such service. The scope of their special training in food work will be prescribed to you after conference with the senior instructor in charge of the course in food work.

After a little experience it was found that the schedule as laid out in this letter was somewhat more elaborate than was necessary and a simpler curriculum was eventually adopted.

In addition to military and didactic instruction, students were given considerable experience in the running of messes, inspection of foods, and other practical matters pertaining to their future duties. On the other hand, it was found that most of the officers accepted by the division were already fairly well posted regarding the purely theoretical side of the work; and by somewhat reducing the military part of the course, it became possible to qualify officers for field service in rather less than the minimum of two months contemplated in the original plan.

This instruction at Camp Greenleaf was always subject to one handicap, namely, lack of laboratory accommodations and apparatus. At first this did not cause much inconvenience, but as time went on the disadvantage became more serious. The supply of men properly qualified in the basic principles of nutrition and at the same time available for commission was nearly exhausted, and it became necessary to accept as candidates younger men of somewhat inadequate preparation, inducting them as enlisted men and depending upon subsequent training to prepare them to assume the duties of officers. Through the courtesy of the School of Hygiene and Public Health and of the department of chemistry of the Johns Hopkins University, and with the approval of the Committee on Education and Special Training of the General Staff, arrangements were made to receive a limited number of properly qualified men of draft age as a part of the Students' Army Training Corps of the university, and to give them an intensive course of six weeks' duration in food chemistry, physiology of digestion, assimilation, and allied subjects, and the general principles of nutrition as preliminary to their selection for commission and further training at Camp Greenleaf.[7] The first three men had reported to this school when the armistice was signed.

SURVEY PARTIES AND THEIR METHODS.

In accordance with the proposed plan, survey parties were formed as the necessary personnel was assembled and sufficiently trained. The first survey party proceeded to the Ambulance Service Concentration Camp, later known as Camp Crane, at Allentown, Pa. A few weeks later another party left for the Medical Officers' Training Camp at Fort Oglethorpe, Ga. Following this, parties were made up and successively dispatched to the camps of other nonmedical organizations, until authorization from the Secretary of War provided that a party might consist of four officers and eight enlisted men. It was never possible, however, because of insufficient personnel, to use that number. The constitution of the survey parties was about four officers and four enlisted men when a division camp was to be surveyed, and two officers and two enlisted men when one of the smaller camps was visited. Many changes were made in the personnel of these parties, but so far as possible it was the custom to have one experienced captain in charge, and in the larger parties at least one experienced lieutenant under him. The effort was made also to have as one officer of each party a medical graduate, the others being physiologists, physiological chemists, or trained food inspectors.

Up to November 11, 1918, the division had made surveys in 67 different camps, including 49 divisional and other large concentration camps, 14 aviation camps, and 3 war prison barracks, 1 recruiting station, and 1 spruce production camp. Twenty-six of these camps were surveyed a second time, and 3 of them a third time. The total number of individual messes surveyed was 458.[8]

In addition to the inspection of subsistence stores by the survey parties, an officer of the Sanitary Corps visited a number of camps for the purpose of studying the conditions of storage of subsistence.

In these inspections special attention was given to the relations of temperature, moisture, and period of storage to sanitary quality, nutritive value, and prevention of spoilage and waste of foods. The examinations included (1) meats and dairy products, which must be kept in actual cold storage to prevent deterioration in sanitary quality; (2) potatoes, onions, and other vegetables, which should be maintained at temperatures which prevent freezing in winter and loss of sprouting and decay in warm weather; (3) flour, corn meal, rice, and other cereals, which must be properly stored and the supply so regulated as to prevent loss through molds, mildews, or weevil and other insect pests; (4) dried, smoked, preserved, and canned products.[9]

When possible, recommendations as to improvement in storage conditions were made. The importance of increased cold-storage facilities was emphasized, and the great need of special vegetable cellars or storage houses for potatoes and other vegetables was pointed out.

INSPECTIONS IN HOSPITALS.

A further activity of the division consisted of detailed inspections of nutritional conditions in the military hospitals. By the close of 1917 it had been found in many of these institutions that useful work could be done regarding dietary matters, details of serving in the main dining room, wards, etc., and officers were assigned specially to this duty. A majority of the hospitals of the eastern and central parts of the country were visited by these officers. They found many conditions which offered opportunity for betterment and gave advice concerning the adaptation of menus to the dietary requirements of various clinical conditions, the reduction of waste, the problem of getting food to the patients in that hot, appetizing condition so desirable for those whose appetite is likely to be more or less impaired. Various technical problems on mess management also received attention.

On June 21, 1918, a report summarizing some of the conclusions reached was submitted to the Hospital Division of the Surgeon General's Office. This was published to the commanding officers of all base and general hospitals throughout the country. It included a scheme of mess organization which was approved by the Hospital Division, and which was reproduced in the Mess Officers' Manual. Special reports on individual topics were submitted.[10]

Throughout all this hospital survey work the two officers who conducted it were in a very favorable position to bring about close cooperation between the activities of this division and those of the Hospital Division, in so far as the latter was concerned with the feeding of patients; they constituted, too, a medium for the exchange of ideas between the different hospitals included in their various itineraries.

CONFERENCE OF OFFICERS.

Soon after survey work was started in October, 1917, need was felt for closer cooperation between the different parties, for standardization as regards recommendations to be made, as to forms of reports and channels through which they should be transmitted, and particularly as to how broad a field should be covered by the activities of the division. Accordingly, the leaders and older members of the various survey parties were recalled to Washington for a general conference, which was held from January 5 to 11 at the Surgeon General's Office. Various points concerning the operation of the division were taken up seriatim, and the consensus of opinion regarding the possibilities and limitations of constructive work in the camps formed the basis of instruction issued for the further guidance of parties. Reports carrying recommendations were to be made to the division or camp commander, as the case might be, through the division or camp surgeon, and the following reports were ordered to be sent through channels to the Surgeon General: [11] (1) Two-day report stating the plans for the survey, conditions peculiar to the camp, progress made, etc.; (2) brief final report describing what the party had done, any special features affecting the interpretation of the final report, copy of recommendations filed with division surgeon, and suggestions for work of other parties, if anything of this nature seemed desirable; (3) final or statistical report to be made after analyses of foods and garbage had been received from the laboratories.

Upon the close of the conference the party leaders carried back to the field renewed enthusiasm derived from the frank and earnest discussion of the rough places encountered and difficulties overcome.

NUTRITION OFFICERS.

While sufficient statistical data had not yet been accumulated to warrant any recommendations concerning modification of the ration, it had already become clear that there were some very definite mistakes in actual mess management and that the mess personnel was usually quite ignorant of the ideals to be worked for or the nutritional principles which determined them. Mess officers and sergeants were nearly all fresh from civil life, where, in the great majority of cases, they had been doing work in no way related to their present duties. Willing enough to learn anything that might lessen their perplexities, the advice to which they listened with attention too often was forgotten after the survey party had moved on. Messes left in excellent condition so often reverted to their earlier state of inefficiency that it was evidently necessary, in order to insure permanent improvement, to station an officer of the division in each camp.

It must be remembered that the object of the work was not merely to improve nutritional and economic conditions in the American camps. Even more important was the duty of so training the mess officers in underlying principles as to prepare them to make the best of any situation that might arise under combat conditions in Europe. An officer whose knowledge was limited to some arbitrary rule of thumb would be helpless if he were unable to obtain his customary supplies. The fundamental reason, therefore, for stationing an officer in each camp was that he might be ever on hand to teach the proper procedure in case of unexpected emergency—to be the clinical teacher, so to speak, instructing not only didactically but by the aid of those concrete examples which occur frequently in the daily administration of camp life. His advice would also be very valuable concerning more or less routine matters, for example, repeated inspection of all subsistence stores with reference to nutritional value, freedom from adulteration, vermin, and spoilage; periodic inspection of mess conditions to insure proper protection of the food in the mess houses; and supervision over the cooking and serving. In addition, it would be his duty to give systematic instruction to the mess personnel concerning the proper balancing of menus, the functions of the chief constituents of the diet (proteins, fats, carbohydrates, salts, accessory substances, and the significance of each reaction). He would also charge himself to see that strict economy was at all times practiced.

On January 29, 1918, a letter to The Adjutant General was prepared by the division for the signature of the Acting Surgeon General, requesting authority to station an officer permanently in each camp. This letter was referred by The Adjutant General to the Quartermaster General for remark. The Quartermaster General did not favor the plan, and it was therefore disapproved by The Adjutant General. Late in May, 1918, the matter was again brought to the attention of The Adjutant General, accompanied by a considerable amount of data as to what had been accomplished already by this division by numerous requests for nutrition officers, and by definite plans outlining what it was hoped would be achieved in the future. On July 15, 1918, the action requested, with provision for additional personnel, was authorized, as follows:[12]

V — 1. A Food Division was authorized by the Secretary of War (A. G. O. 720.1 Misc. Div., October 16, 1917) to make nutritional surveys of the military camps both in this country and abroad "for the purpose of safeguarding the nutritional interests of the Army (1) by means of competent inspection of food with reference especially to its nutritive value, (2) by seeking to improve mess conditions, and (3) by studying constantly the suitability of the ration as a workingman's diet."

2. This division will hereafter be designated the Division of Food and Nutrition of the Medical Department. All provisions of said letter of authorization, except that portion referring to the length of time necessary for nutritional survey of a camp and the frequency of such surveys, are continued and made applicable to the new designation, and the following regulations pertaining thereto are published for the information and guidance of all concerned.

3. A "nutrition officer" will be designated from the officers of the Medical Corps, Medical Reserve Corps, or Sanitary Corps by the Surgeon General, or by the local commanding officers with the approval of the Surgeon General, for each training camp or post used as a training camp or recruiting station the strength of which is 10,000 or more.

4. The duties of the nutrition officer shall be:

(*a*) To advise the commanding officer, the camp quartermaster, and the camp surgeon on all matters relating to the composition and nutritive value of foods.

(*b*) To inspect, as directed by the commanding officer, foods and rations in the hands of organizations with reference to nutritive value, freedom from adulteration, spoilage, or deterioration from any cause.

(*c*) To cooperate with the School for Cooks and Bakers, where such schools exist, in the instruction of mess sergeants and mess officers in the fundamentals of nutrition, to wit, purposes served in nutrition by the different foodstuffs (protein, fats, carbohydrates, mineral salts, vitamines) and the proper construction of dietaries so as to insure a satisfactory distribution of these nutriments.

(*d*) To assist in the coordination of mess requirements with subsistence supplies, whether carried by the camp quartermaster or purchased locally.

(*e*) To cooperate with and advise the conservation and reclamation officer with reference to the best classification, separation, and disposition of wastes from food.

(*f*) To render directly to the camp commander reports on urgent food matters that require immediate executive action.

(*g*) To report through the camp surgeon on all matters relating to food conditions of the camp as these may affect the nutritional welfare of troops.

5. The nutritional surveys authorized will hereafter be conducted in such camps and with such frequency as may be deemed necessary by the Surgeon General.

6. Nutrition officers in such number as the exigencies of the service may require, but not to exceed 20 in number, will be appointed from the officers of the Medical Corps, Medical Reserve Corps, and Sanitary Corps, for special detail in hospitals, hospital ships, laboratories, or to other departments of the service. The duties of such officers on special detail will be prescribed in orders assigning them to duty.

In accordance with this order personnel was appointed as shown in the following table:[13]

Duty.	Lieutenant colonel.	Major.	Captain.	First lieutenant.	Second lieutenant.	Total.
Surgeon General's Office	1	1	1		1	4
Medical officers' training camp		1	1			2
Nutrition officers at camps			11	12	17	40
Survey parties			6	10	10	26
Overseas		3	12	9	8	32
Laboratory and miscellaneous details		3	4	5		12
Total	1	8	35	36	36	116

Even before it became generally known that nutrition officers had been authorized, requests for them were received from many camps. As rapidly as suitable officers became available they were stationed first in these camps and, as far as the number would permit, in other camps with a strength of more than 10,000 troops.

On November 11, 1918, the following camps had been supplied, and a group of 20 additional officers was training at Camp Greenleaf for assignment to other camps:[14] Camps Bowie, Beauregard, Cody, Custer, Devens, Dix, Dodge, Fremont, Funston, Grant, Humphreys, Hazelhurst Field, Camp Jackson, Kelly Field, Camps Joseph E. Johnston, Kearney, Lee, Logan, Meade, Pike, Sherman, Sheridan, Shelby, Zachary Taylor, Travis, Upton, and Fort Sill.

Usually nutrition officers were provided with enlisted assistants, either from this division or from some organization in the camp. In a few cases second lieutenants who had completed their course at Camp Greenleaf were temporarily stationed on special detail as assistants for the purpose of giving them experience so desirable as a preparation for assuming independently corresponding duties in other camps.

Improved results soon justified the stationing of officers, but from the following consideration it became evident that the personnel authorized for this division was insufficient.

The nutrition officer was continually finding himself confronted by situations demanding criticism, at least implied, for the methods of mess officers, and by the necessity of giving them advice. Unless his rank was about equal to theirs some embarrassment was likely to be caused, and his advice often did not receive the respect to which it was entitled. Apparently, therefore, the employment of second lieutenants as nutrition officers in any but small camps would not be productive of good results. But the combined number of captains and first lieutenants to be used as nutrition officers was only 23.[13] Moreover, from overseas came repeated calls for more officers, and as these calls naturally took precedence over domestic needs the force of men available was continually being depleted and it was never possible to provide for all camps contemplated in the order of authorization. Besides, a number of camps not included in the originally authorized list expressed a desire for officers.

While evidently the first duty of the division was to safeguard the immediate nutritional interests of the soldier, yet it was also highly desirable to take advantage of such an extraordinary opportunity for scientific research, in so far as this could be done without in any way compromising this main duty or interrupting the training of the men to fight. Probably at no other time had so large a body of persons been available for observation regarding their nutritional welfare under such favorable conditions as in the American camps, and it appeared that if the war continued long many of the findings would soon have important application, not only in the Army but with the civilian population as well. Accordingly authorization for additional personnel to be detailed to special studies had been requested and was in contemplation by the General Staff when the signing of the armistice rendered such action unnecessary.

SPECIAL ACTIVITIES.

As was to be expected in undertaking a service of the kind outlined in previous sections, many problems were met which required immediate and intensified investigations. A number of university laboratories were placed at the disposal of the division. At its very inception an assurance was received from several governmental departments of a willingness to cooperate in any possible manner. Only a brief summary is presented here of the special studies which were undertaken and carried to at least partially successful completion:[a]

(*a*) Plans were made at an early date for the study of dehydration of various food materials. This problem was assigned to the Harriman research laboratory at the Roosevelt Hospital in New York City.[15] The facilities of the laboratory had been offered to the Surgeon General through the generosity of its benefactress and its director. A member of the laboratory staff was commissioned a captain in the Sanitary Corps, sent to Camp Greenleaf for training, and later assigned to the Harriman laboratory in charge of special research under the direction of the Surgeon General. Several assistants were from time to time assigned to this laboratory. Besides the dehydration of food material the chemistry of meat spoilage was especially investigated at that place. The program outlined was agreed upon between the director of the division and the director of the laboratory.

(*b*) At the instance of the Bureau of Chemistry of the Department of Agriculture a special study upon the physiochemical properties of gluten was sponsored and supported by the division, with the laboratory of physical chemistry at Harvard University. The object of this investigation was to determine how the gluten strength of bread might be reinforced in order that substitutes for wheat flour might be used in larger quantities.[16]

(*c*) The attention of the division was called to the possible changes in the condition of market meats by the United States Food Administration. The most recent analyses which were available had been made some 20 years ago, and the changes in feeding animals for the market, it was thought, might have brought about a considerable difference in the relative property of fat in the various kinds of meat as they were placed upon the market. An officer of the Sanitary Corps was assigned the task of supervising new analyses at the laboratories of the large meat packers in Chicago.[17] The packers showed every willingness to cooperate and in fact gave the use of their laboratories for the period of one month, during which sufficient knowledge was gained to make certain that no substantial change on account of newer methods of feeding had occurred.

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[a] Paragraphs (*a*) to (*h*), inclusive, are abstracted from the volume on Sanitation, in which complete details regarding these investigations will be given.

(*d*) Instructions were given to survey parties at an early date to be on the lookout for an opportunity to study several nutritional problems upon which more information was needed.[18] Amongst these were: (1) The relation of diet to the incidence of disease, especially of incidence of colds and other respiratory infections of a minor nature. This was finally undertaken at Camp Wheeler in the spring of 1918. (2) The effect of military training on the physical development of the soldier with special reference to its nutritional aspects. Such a study was undertaken at Camp Devens by survey party No. 1; also at Camp Grant, Camp Dodge, Camp Funston, and Camp Pike. (3) The mineral composition of the ration as used, with particular reference to calcium, phosphorus, iron, and the balance of total acids and bases. Such studies were made at Camp Cody, Camp Fremont, and Camp Custer. Several of these studies yielded results which were considered of sufficient importance for publications. In addition, the personnel of the office, besides their administrative duties, made several contributions based upon the results of nutritional survey parties and the results of personal inspection.

(*e*) A ration balance devised to permit the mess sergeant to determine by mechanical means and without calculation whether the diet of his mess is properly balanced was patented and dedicated to the public by the chief of the division and one of his assistants.[19]

(*f*) The following new rations were prepared in the office of the division.[20] The first, known as the "Red Cross ration," for American prisoners of war, was prepared at the request of the National Headquarters of the American Red Cross. It was submitted to that organization and accepted by them, after which it was approved by the Surgeon General and forwarded for approval to the Secretary of War in October, 1917. Through a misunderstanding this ration was never put into effect, but upon receipt of complaints regarding the ration actually in use a second "Red Cross ration" for American prisoners of war was submitted, in August, 1918, at the request of the Acting Quartermaster General. This ration was adopted. A ration suitable for American prisoners ill in enemy camps was also called for by the American Red Cross and was submitted, in January, 1918, under the title "invalid ration" and was put into effect by order of the President.[20]

At the further request of the American Red Cross consideration was given to the problem of expending in the most economical manner, from the nutritional standpoint, the funds guaranteed by the Serbian Government for food materials to be supplied through Red Cross channels to Serbian prisoners in Austria-Hungary.[20]

Based on the nutritional surveys, an improved ration for the training camp was submitted by the Surgeon General to The Adjutant General under date of June 3, 1918.[21] As a result of this recommendation, the Secretary of War ordered the Quartermaster General to consider a revision of the ration and rationing system.[22] A conference was held at the office of the Quartermaster General on July 19, 1918, at which were present representatives of The Adjutant General's Office, Inspector General's Office, Quartermaster General's Office, War Plans Division of the General Staff, and the Surgeon General's Office.[22] This conference approved the training ration recommended by the Surgeon General, but it was later disapproved by the executive division of the General Staff and instead changed to Army Regulations, Nos. 83, 84, and 86, effective April 1, 1919, which were adopted.

(*g*) A considerable number of reports on spoilage of foods as noted by nutritional survey parties and nutritional officers were compiled and transmitted to the Subsistence Division, Purchase, Storage, and Traffic.

Reports were made on a considerable number of new food products submitted by the Subsistence Division for analysis tests in Army camps and recommendations regarding their suitability for use in Army messes.

(*h*) Standard specifications for various dehydrated products were worked out in cooperation with the Subsistence Division, Purchase, Storage, and Traffic, the Bureau of Chemistry, Department of Agriculture, and the United States Food Administration.[23]

OFFICERS SUPPLIED TO AMERICAN EXPEDITIONARY FORCES.

The first request that officers of the division be sent abroad was received in February, 1918. It called for six officers, and early in March this number departed for foreign duty.[24] In May another request was received, and during June and July, 1918, 20 officers were detailed overseas.[25] On November 16, 1918, the final party, consisting of 10 officers, sailed.[26] All officers were dispatched at the request of the chief surgeon, American Expeditionary Forces. More had been called for and would have departed the latter part of November, but almost as soon as the armistice was signed further additions to the American forces in Europe were brought to a halt. The value of the work of these officers abroad was fully recognized by the repeated calls for more of them, and particularly by a request dated October 11, 1918, that every division of troops sent over should in the future have attached a division nutrition officer.[27] An account of the work of these men in Europe is comprised in a report of the chief surgeon, American Expeditionary Forces.[28]

AFTER THE ARMISTICE—NOVEMBER 11, 1918, TO MAY 20, 1919.

Soon after the signing of the armistice this division became the Section of Food and Nutrition of the Division of Sanitation. (See Chart XXIV.) The signing of the armistice naturally caused changes in the plans of the section. The training of additional personnel was interrupted at once, and the students taking the special course at Johns Hopkins University and also those at the school of Nutrition at Camp Greenleaf were recommended for honorable discharge. Three officers were assigned to duty at the port of embarkation, Hoboken, for the purpose of supervising mess conditions in the debarkation and transportation of troops, particularly the wounded, arriving from Europe.[29]

The work in the hospitals was continued by an officer who made a special report, including appropriate recommendations to the commanding officer of each hospital visited. A copy of this report was submitted to the Hospital

Division of the Surgeon General's Office.[30] In this way, by bringing definite points of criticism to the attention of those concerned, uniform excellence was sought. A few matters which were constantly demanding attention were treated individually in short circulars, and one of these was issued in mimeographed form by the Surgeon General through the Hospital Division to the base and general hospitals under the caption, "Waste control." These bulletins comprised a discussion both of practical hospital mess management and of the scientific principles involved.

Survey parties in division camps had already been abandoned and their places taken by nutrition officers. They were still continued, however, in the aviation fields. Many of the latter were greatly in need of advice, and since nutrition officers were not authorized for camps of a strength less than 10,000 troops the only way to assist was through the visits of itinerant parties.

By November, 1918, nutrition officers had been long enough in their respective camps to permit of gauging with certainty the value of their efforts. Many reports from them,[8] substantiated by camp orders embodying their recommendations, showed that commanding officers soon came to depend upon their advice; and they were thus able to effect many improvements.

All this work was soon more or less handicapped by the general let down in morale, due to the feeling that since the war was over, there was no further any real reason to maintain either the best nutritional conditions or the greatest economy. In camps where active demobilization was in process, it was nearly impossible for the nutrition officers to obtain active cooperation on the part of the mess personnel. On the other hand, where demobilization was less active and where the messes had already learned the desirability of the measures recommended, considerable progress was still made.

Demobilization within the section itself proceeded fairly rapidly. The large majority of the officers indicated their willingness to remain as long as their services might be particularly useful, but desired to return to civil life as soon as they could be conveniently spared. Several officers, on the other hand, desired to be transferred from a temporary status to the Regular Army and made application accordingly. In recommending officers for honorable discharge the plan was followed, as far as practicable, of reducing the number rather than the efficiency of the survey parties; and it also seemed wise to keep the divisional nutrition officers at their posts as long as the commanding officers thought their presence was urgent. In some cases the immediate need for nutrition officers was felt more than before. While the Army was in active training for European service, the great majority of company officers were only too anxious to learn anything that promised to be of assistance. After the armistice this condition no longer prevailed and the higher officers were often disturbed over the difficulty of maintaining satisfactory conditions.

With the diminishing personnel, the special lines of research were gradually abandoned. In the Harriman research laboratory, New York City, the researches in progress were pushed to early completion and the laboratory was completely demobilized before April 1, 1919.

In the division the following work was done:[31]

1. A table of analyses for the use of nutrition officers or others in calculating the calorific value of foods usually sold at post exchanges was prepared.

2. A recalculation of the survey reports was completed. This recalculation was necessary because it was feared that the extremely unfavorable conditions under which computations were necessarily performed in camp might be expected to effect the accuracy of the figures, and it was felt wiser to check them in the office where a computing machine and a library were available as well as a sufficient force experienced in this work. This computation involved: (*a*) Recalculation of food computation sheets according to the standard set of analyses, special care being taken to secure an accurate list of foods from a comparison of the food, food computation, cost, and menu sheets; (*b*) recalculation of waste, using the party data whenever complete—in the few cases where the data were incomplete the average garbage analysis was used; (*c*) calculation of a summary sheet from the new figures and a comparison of these sheets with the old ones in order that any source of discrepancy other than erroneous computations might be discovered.

While the average difference between the new and old results proved to be small, yet in individual cases large errors in the field reports occasionally crept in. The principal sources of these errors were faulty calculation and mistakes in treating crude fiber differently in food computation and waste calculation; also errors in conversion from the dry basis of analysis to the wet basis of the actual materials. It should be noted that only the figures having a bearing on the nutritional side of the surveys were recalculated. Cost figures, while undoubtedly also showing individual errors, were not recalculated since the primary aim of this work was to determine nutritional rather than financial conditions.

3. Studies were made and expressed in graphic or tabular form as follows: (*a*) Relation of the purchasing power of the quartermaster allowance to the cost of food for various months; (*b*) waste reduction at Camp Wadsworth; (*c*) relative amounts of animal and vegetable protein in 50 messes; (*d*) post exchange consumption for 261 messes, tabulated and presented in the form of a distribution graph—cost per thousand calories of post exchange commodities in the same 261 messes also shown in the same way; (*e*) number of articles purchased during one week by 290 messes in the form of a distribution graph; (*f*) distribution graph of the weight of three groups of men at the time of enlistment and four months later; (*g*) nutrients consumed in different kinds of organizations; (*h*) comparison of the different rations of the allied armies; (*i*) distribution graph of the percentages of the total energy consumed as protein, fat, and carbohydrates in 427 messes; (*j*) comparison between the consumption of certain commodities in Army messes and in civilian families; (*k*) comparison of the energy values of the principal components of the garrison ration with their several substitutes.

4. At the request of Col. F. F. Russell, M. C., Chief of the Division of Laboratories and Infectious Diseases, a course of instruction on food and nutrition to be given at the Army Medical School with laboratory exercises was prepared.

The following course of instruction was prepared in the division:

(*a*) Food values	1 day.
(*b*) Inspection of food in markets and factories	3 days.
(*c*) Nutritional surveys; inspection and sanitation of messes; hospital mess management	3 days.

(*d*) Combustion of foods	1 day.
(*e*) Energy metabolism; Douglas bag method; Benedict apparatus	2 days.
(*f*) Rebreathing tests for aviators	2 days.
(*g*) Blood changes:	
Gases	1 day.
Sugar and fat	1 day.
(*h*) Acidosis	1 day.
(*i*) Protein metabolism	1 day.
(*j*) Acid-base equilibrium	1 day.
(*k*) Menus	1 day.

Interpolated with above, the study of accessory food substances or vitamines and the corresponding deficiency diseases, scurvy, beriberi, pellagra. xerophthalmia, war edema, was conducted.

PERSONNEL.[b]

(April, 1917, to December, 1919.)

Murlin, John R., Lieut. Col., S. C., chief.
    Eddy, Walter, Maj., S. C.
    Forbes, E. B., Maj., S. C.
    Gephart, F. C., Maj., S. C.
    Hoskins, R. G., Maj., S. C.
    Joseph, Don, Maj., M. C.
    Mason, C. C., Maj., S. C.
    Miller, C. W., Maj., M. C.
    Milner, R. D., Maj., S. C.
    Prescott, S. C., Maj., S. C.
    Street, J. P., Maj., S. C.
    Anderson, R. J., Capt., S. C.
    Bell, R. D., Capt., M. C.
    Blatherwick, N. R., Capt., S. C.
    Dox, A. W., Capt., S. C.
    Flanders, F. F., Capt., S. C.
    Garrety, W. P., Capt., S. C.
    Hildebrandt, F. M., Capt., S. C.
    Mason, R. E., Capt., M. C.
    Shohl, A. T., Capt., S. C.
    Thomas, Arthur W., Capt., S. C.
    Harrison, B. H., First Lieut., S. C.
    Schaffer, Philip, First Lieut., S. C.
    Wachman, J. D., First Lieut., S. C.
    Sweet, F. H., Second Lieut., S. C.

REFERENCES.

(1) S. O., No. 205, W. D., September 4, 1917.

(2) Semi-annual report of Division of Food and Nutrition, S. G. O., ending December 31, 1917. On file, Historical Division, A. G. O.

(3) Letter from Surgeon General to Adjutant General, October 15, 1917. On file, Record Room, S. G. O., 720.1 (Food Survey).

(4) Letter from Adjutant General to Surgeon General, October 16, 1917. On file, Record Room, S. G. O., 720.1 (Misc. Div.).

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[b] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

(5) Letter from Surgeon General to The Adjutant General of the Army, October 26, 1917, with second indorsement from Adjutant General, October 26, 1917. On file, Record Room, S. G. O., 720.1 (Misc. Div.).

(6) Letter from the Surgeon General to commandant, Medical Officers' Training Camps, Camp Greenleaf, Fort Oglethorpe, Ga., March 7, 1918. On file, Record Room, S. G. O., 353 (Nutrition, Camp Greenleaf) (C).

(7) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1026.

(8) Weekly reports, Division of Food and Nutrition. On file, Record Room, S. G. O., Weekly Report File; 720.1 (Nutritional Surveys).

(9) Weekly reports, Division of Food and Nutrition, June 7, 1918, and June 20, 1918. On file, Record Room, S. G. O., Weekly Report File, and 720.1 (Nutritional Surveys).

(10) Weekly report, Division of Food and Nutrition, June 21, 1918. On file, Record Room, S. G. O., Weekly Report File.

(11) Weekly report, Division of Food and Nutrition, January 12, 1918 (Memo. attached). On file, Record Room, S. G. O., Weekly Report File.

(12) G. O., No. 67, Par. V, W. D., July 15, 1918.

(13) Table F–1. Commissioned personnel for the Division of Food and Nutrition, Sanitary Corps, July 19, 1918. On file, Record Room, S. G. O., 024.13 (Food Division).

(14) List commissioned officers, with stations, Section of Food and Nutrition, December 4, 1918. On file, Record Room, S. G. O., 024.13 (Food Division).

(15) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1027.

(16) Report. On file, Record Room, S. G. O., 720.1–2 (Food, Analysis of), 1918.

(17) S. O., No. 43, W. D., February 20, 1918.

(18) Nutritional survey of camps, Table 2. On file, Record Room, S. G. O., 720.1 (Nutritional Survey), 1918.

(19) Ration Balance, Patented and Dedicated to the Public, by Lieut. Col. John R. Murlin and Capt. W. P. Garrety.

(20) Annual Report of the Surgeon General, United States Army, Vol. II, 1028.

(21) Weekly report, Division of Food and Nutrition, June 7, 1918. On file, Record Room, S. G. O., Weekly Report File; Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1028.

(22) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1028.

(23) Inspection Manual of the Subsistence Division, Bull. No. 38, February 5, 1919.

(24) Cablegram from Gorgas to Pershing, No. 769, February 11, 1918, par. 8. On file, Record Room, S. G. O., Cablegram File. Cablegram 614, February 18, 1918, par. 5 from Pershing. On file, Record Room, S. G. O., Cablegram File.

(25) Cablegram No. 1153, May 22, 1918, par. 8. No. 1294, June 13, par. 3–a. On file, Record Room, S. G. O., Cablegram File.

(26) Cablegram No. 262, October 11, 1918, par. 1. Request from Pershing. On file, Record Room, S. G. O., Cablegram File.

(27) Copy of cablegram S. O. S. No. 262, October 11. On file, Record Room, S. G. O., 024.13 (Food Division).

(28) The Medical Department, A. E. F,, to November 11, 1918, IV, Office of the Chief Surgeon, Historical Division, April 17, 1919, 41. On file, Historical Division, S. G. O.

(29) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1029.

(30) Report of hospital nutrition officer. On file, Record Room, S. G. O., 720.1 (Nutritional Survey), Part No. 5.

(31) Weekly reports, Division of Food and Nutrition. On file, Record Room, S. G. O., Weekly Report File.

CHAPTER XI.

HOSPITAL DIVISION.

DEVELOPMENT.

Before the United States entered the World War, the organization of the Surgeon General's Office did not provide for a Hospital Division. The peace-time program was such that all hospital projects were authorized by the Surgeon General personally, often as the result of conferences, in which other officers of his staff joined. Three or four clerks who were draftsmen were employed in sketching preliminary plans for new buildings or for alterations and extensions of existing buildings. These preliminary outline plans, with supporting data, were the media for conveying to the Construction Branch of the Quartermaster Department the needs and desires of the Surgeon General.[1] Soon after the United States entered the war, the need of a definite hospitalization program of larger scope became apparent, and accordingly, early in July, 1917, the Hospital Division of the Surgeon General's Office was organized.[2]

The work of the division soon increased enormously, requiring a reorganization for the purpose of effecting a more satisfactory distribution of responsibility and of securing more efficient service. The organization, as it was developed by June, 1918, is shown in Chart XII.

Thus the Hospital Division was charged with the responsibility of handling the entire program of hospitalization.

In the early stages of preparation effort was concentrated on the base hospitals for overseas and those for the large mobilization camps of this country. Fortunately a good start had been made in the organization of 50 Red Cross base hospitals with equipment, in cooperation with leading civil hospitals and universities.[3] This had proceeded to a point that made it possible to send eight base hospitals to the British forces in May, 1917, and to our own forces as rapidly as they were needed, up to about the end of the first quarter of 1918, and as rapidly thereafter as transportation was available.

The problem was more acute with reference to the hospitals for the large mobilization camps in this country. Thirty-two large camps were scheduled to open in the autumn of 1917. It was necessary, therefore, to prepare plans for the erection of hospitals for larger camps of various capacities and to select personnel. This was the most urgent task of the Hospital Division.

These, then, were the two phases of the problem which received first consideration because of their urgency. In addition to the planning and organization of hospitals for the mobilization camps, the program included the organization of medical units for overseas duty, the organization of smaller camp hospitals, excepting in aviation camps,[a] the acquisition and organization

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[a] The Aviation Section of the Signal Corps, created a separate section by act of Congress, June 3, 1916 (Bull. No. 16, War Dept., June 22, 1916), was materially enlarged by act of Congress, July 24, 1917 (Bull. No. 46, August 15, 1917), in the provision of which authorization was given for the necessary construction, maintenance, and repair of hospitals at aviation stations. (For further details, see Volume V, Hospitals, United States.)

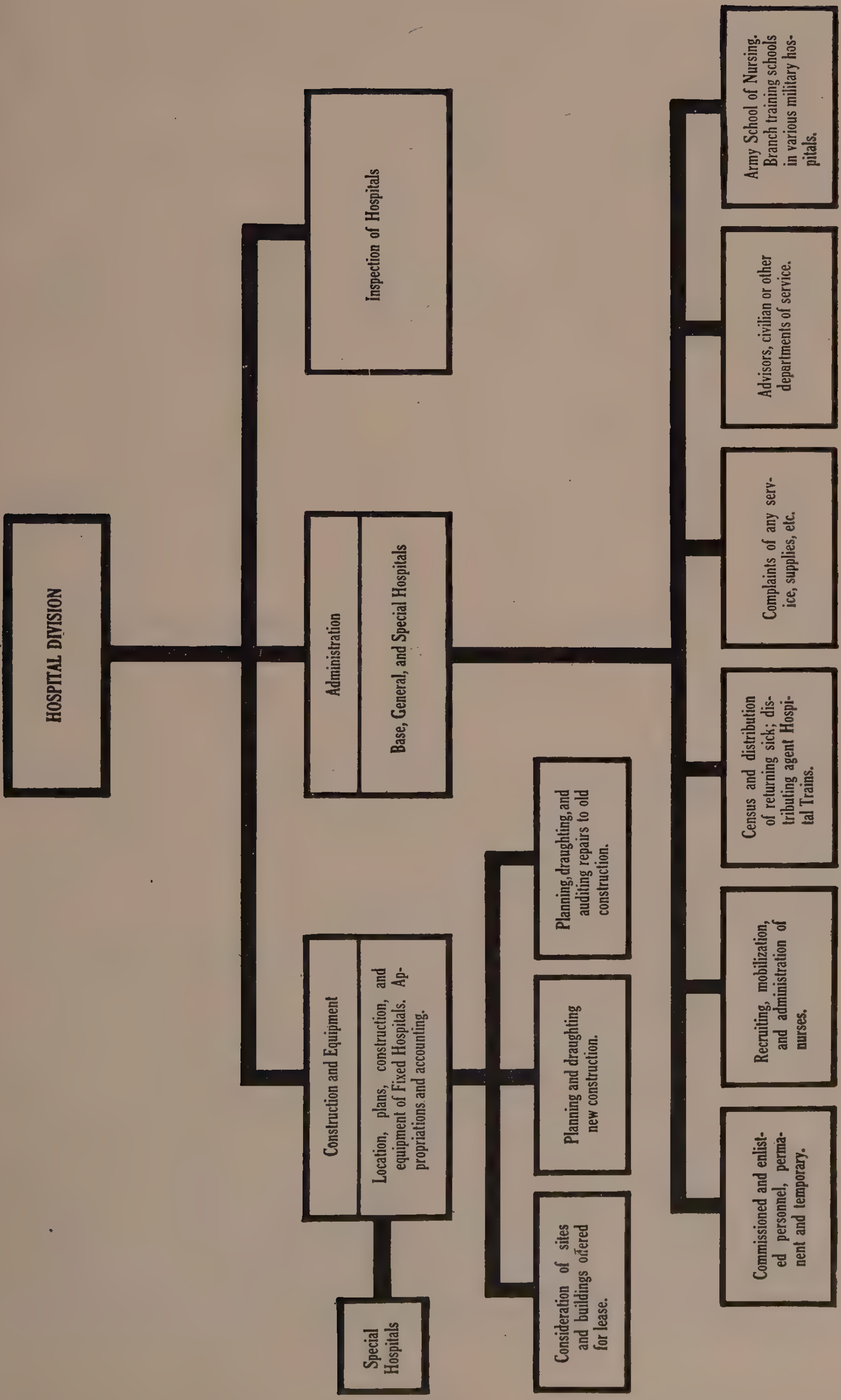
HOSPITAL DIVISION
Inspection of Hospitals
Administration
Base, General, and Special Hospitals
Construction and Equipment
Location, plans, construction, and equipment of Fixed Hospitals. Appropriations and accounting.
Special Hospitals
Planning, draughting, and auditing repairs to old construction.
Planning and draughting new construction.
Consideration of sites and buildings offered for lease.
Army School of Nursing. Branch training schools in various military hospitals.
Advisors, civilian or other departments of service.
Complaints of any service, supplies, etc.
Census and distribution of returning sick; distributing agent Hospital Trains.
Recruiting, mobilization, and administration of nurses.
Commissioned and enlisted personnel, permanent and temporary.

CHART XII.—Hospital Division, Surgeon General's Office, June, 1918 of hospital trains and the acquisition of buildings suitable as hospitals for the reception and treatment of returned sick and wounded.

In general the basis for hospitalization overseas was very indefinite, but base hospitals were called for at the rate of four to each division. These were organized, each on a 500-bed basis.[4]

Generally speaking, the organization of the services followed the plan outlined by the Surgeon General for the guidance of officers of medical officers' training camps and mobilization camps, as follows:[5]

November, 11, 1917.

Attention is called to the fact that the memorandum previously issued by the Surgeon General (recognition of sections representing specialists) and paragraph 290 is amended to provide for three services, namely, Surgical, Medical, and Laboratory, with a chief for each service, and, further, to provide that each of these services shall include the following special sections, or as many as may be necessary (500-bed basis):

Surgical Service.

1 chief of service—General, chest.
4 surgeons—Abdomen, fractures.
4 surgeons, head section—Brain, eye, ear, nose and throat, plastic (face and mouth).
1 surgeon—Orthopedic.
1 surgeon—Urology.
1 roentgenologist.
2 dentists.

Medical Service.

1 chief of service.
4 physicians (including 1 neurologist), 1 or 2 psychiatrists (in camp hospitals in United States).

Laboratory Service.

(Include pathology, bacteriology, serology, chemistry, morgue, and public-health laboratory work for the command.)

1 chief of service (to cover pathology, bacteriology, serology).
(All other laboratory workers are under the chief of this service.)

For the head section a section chief may be designated, if desired.

The commanding officer will organize a convalescent camp as the conditions warrant.

The Nursing Service remains as at present, with the provision that the number of nurses may vary according to the needs of the service.

Paragraph 307 is amended to include laboratory chiefs.

Attention is called to the fact that the provision of the several specialists in the medical and surgical organization is solely for the purpose of providing competent professional attention for the sick and wounded. The individual members of the staff, although assigned to duty with the organization for the purpose of providing special skilled service as the occasion may warrant, are nevertheless to be used as the chiefs of service and the commanding officer may direct. This provision is made in order that the work may be properly covered at all times and in order to accomplish the results expected from good organization and administration.

Early in 1918 this personnel was increased on a basis of 1,000 beds, the officers being increased to the number of 35, the nurses from 65 to 100, and the enlisted men from 150 to 200.[6]

In the beginning, and in fact to the end, no definite mobilization camp for medical organizations was provided, which was a great handicap. Difficulty was encountered particularly in mobilizing the first 50 Red Cross base hospitals. It had to be taken into consideration that these were entirely civilian organizations; that, for the most part, they were entirely ignorant of Army procedure; and that they would continue as such until mobilized and a commanding officer assigned to train their personnel. It became necessary to mobilize these organizations considerably in advance of their sailing orders because of the difficulty of transportation and the fact that no equipment was issued to the enlisted men until they were mobilized.

Finally some were mobilized at medical officers' training camps; at the Presidio, San Francisco; at Fort McPherson, Ga., which was a large general hospital; but many were mobilized in armories in their home cities and one in a large auditorium in Milwaukee. Finally the large concentration camps were in operation and the balance of these units were mobilized in these camps.[7]

Eventually the overseas hospitalization program was formulated, and, following the experience of the British and French, the basis was adopted of providing beds equal to 15 per cent of the troops overseas.[8] From this time on the rapid organization of base hospitals became necessary, and these units were formed in the medical officers' training camps and from the surplus personnel of the so-called camp base hospitals at the mobilization camps for the National Army. Wherever these organizations were formed at the camps it was with difficulty that a fully satisfactory staff was held back for the camp hospital, because nearly all officers wished to go overseas, and the commanding officer of the camp hospital usually selected himself for the overseas unit and then proceeded to select the best of the staff for his overseas hospital.

It soon became a very difficult task to find men of executive ability and administrative experience to command hospitals, either at home or abroad. Many of the officers of the Regular Army were needed for field organizations. Some had to be kept at home, however, for administrative and educational work, for the organization of new general hospitals, and to command the large camp hospitals. Competent administrators of civil hospitals were called into service, but the number of these was small, and eventually instructions were issued to all large camp hospital commanders to train understudies, in order to supply the demand. By December, 1917, The Adjutant General had authorized 138 base hospitals for overseas, and the number continued to increase.[9]

The other overseas units mentioned were mobilized, generally speaking, according to tables of organizations, the personnel being increased in some instances to conform to the needs developed in such unprecedented warfare. They were organized in the medical officers' training camps, at the Allentown camp for ambulance companies, and at the large concentration camps.

HOSPITALIZATION PROGRAM FOR THE UNITED STATES.

Before the United States entered the World War, the hospitalization for the Army was as follows:[10] Post hospitals, 131, with bed capacity 5,380; general hospitals, 4, with bed capacity 1,200; base hospitals, 5, with bed capacity 2,950; total bed capacity, 9,530.

Of the post hospitals, 60 per cent were in the interior and 40 per cent at Coast Artillery stations; the majority of these were small, providing from 6 to 48 beds each. The others ranged from 48 to 178 beds in capacity.

Of the general hospitals, 400 beds were for tuberculosis alone, and 250 of the beds at the Army and Navy Hospital at Hot Springs were for special chronic conditions likely to be benefited by the springs. The department base hospitals were provided for the work along the Mexican border, and were located in

Texas at Fort Sam Houston (750 beds), Fort Bliss (900 beds), Brownsville (500 beds), Eagle Pass (500 beds), and at Nogales, Ariz. (300 beds).

It soon became apparent that a tremendously increased bed capacity would be required in many hospitals. Excluding the post and camp hospitals, the main problem concerned two general groups of hospitals—those for the larger mobilization camps and those for the reception of the sick and wounded from overseas. A third group became necessary later in connection with the various students' Army training camps.

The 32 mobilization camps each required a làrge hospital.[11] The time was short and plans were rapidly developed, considering the limited personnel and equipment available at the time. In the completed plans (prepared along lines radically different from the usual Army type), it was supposed that ample provision had been made for laboratories, infectious diseases, wards for the insane, eye, ear, nose and throat patients, a dental infirmary, utility departments, operating rooms, general medical and surgical wards, staff and nurses' quarters, and administration. That the plans were faulty in some respects was due to the spur and necessity of haste and will not seem remarkable if considered in connection with the time it takes to develop plans for much smaller hospitals in civil life. The chief defects were the inadequacy of administrative quarters, insufficient number of wards in many instances, insufficient space for laboratories and enlisted men's barracks and mess rooms, inadequate lavatory, toilet and bathing facilities for handling infectious diseases, inadequate and faulty quarters for nurses and officers.

The erection of the component parts of great camps such as these required the cooperation of many different departments. As in all large undertakings, the difficulty lay in obtaining perfect coordination. One of the greatest mistakes that was made was the erection of the hospital group of buildings among the last, with the result that in most camps the hospitals were not ready when troops arrived and the cases of sickness began to appear. Furthermore, the hospitals were often badly located, in relation to the camp proper, when better sites were available. This could have been avoided by conference with the Medical Department.

The opinion was generally entertained that the National Guard camps in the South would not need heated buildings. This worked a great hardship on the sick men confined to unheated, and at best, to poorly heated hospitals.

The hospitals for the mobilization camps were planned on a basis of beds for 3½ per cent of the troops. This would undoubtedly have been enough for troops protected against contagious diseases by the hardening process of long service, but proved entirely inadequate for an Army of raw recruits. The hospital was later put upon a 4½ per cent basis and this program was nearly completed. In most camps the hospital beds eventually reached 4½ per cent. Except for the epidemics and the large number of men who were brought in under the draft with physical defects requiring operations for hernia, diseased tonsils, and adenoids, the hospitals in the end were generally adequate.

These hospitals were large and for all sorts of ailments; usually they were of from 500 to 1,500 bed capacity, some, however, reaching a capacity of from 2,000 to 3,000 beds. They were organized eventually on the same lines as those for overseas, with three professional divisions—medicine, surgery, and laboratory—each having subdepartments to cover the specialties, such as eye, ear, nose and throat, orthopedics, dentistry, and psychiatry. For a short time the hospital organization called for eight services. In October, 1917, the Surgeon General ordered the adoption of a plan which provided for the recognition of the medical and surgical specialties, so that medical officers coming from civil practice would be able to serve in the special lines for which their experience had fitted them. This plan[12] called for eight sections: Internal medicine; general surgery; orthopedics; venereal and skin diseases and genitourinary surgery; surgery of the head; laboratories and infectious diseases; neurology, psychiatry, and psychology; roentgenology. This policy gave rise to considerable confusion, which, in some hospitals, was never completely overcome. On November 11, 1917, an order was promulgated[5] by which the services fell under three general divisions, surgery, medicine, and laboratories.

The personnel was drawn almost entirely from civil life, officers, men, and nurses, all entirely unfamiliar with Army life and Army methods. An effort was made to place a competent medical officer of the Regular Army in command of each of these hospitals, with three or four regular noncommissioned officers for the training of the enlisted men and as a nucleus for an organization.

The following expanded table of organization for a permanent staff for a 1,000-bed hospital was adopted[13]: One colonel or lieutenant colonel and four majors, M. C.; one captain or lieutenant, Q. M. C.; two captains or lieutenants, S. C.; 12 captains and 13 lieutenants, M. C.; two captains or lieutenants, D. C., 400 enlisted men, 100 nurses, A. N. C.

Mention has been made of the fact that, with the exception of the medical officers' training camps, the Medical Department had no mobilization camps. Accordingly, when Medical Reserve officers were coming into service by the hundreds and thousands, the policy was adopted of sending all who could be accommodated, and usually more, to the camp hospitals for experience and training. In consequence, these hospitals often, in fact usually, had double and, in some instances, treble staffs. This resulted in overcrowding, but it was good policy on account of the training received and the provision at all times of a staff sufficient for any emergency. Orders were issued to institute regular courses of instruction for the better training of all, particularly of the substandard officers.[14]

The organization of the Army hospital[15] provided that the ward master be in charge of enlisted personnel working on the ward, the discipline of the ward, its general cleanliness, and the care of ward property. The nurses were in charge of all nursing care of the patients. This was distinctly different from the organization of the best civil hospitals and caused much friction, since the vast majority of the nurses were fresh from service in civil hospitals, where nurses rank next to the doctors, and orderlies, who correspond to the enlisted men, are under the nurses. Eventually, instructions were issued to the effect that the head nurse of the ward be in charge of the ward and next in authority to the doctor.[16]

The other main group of hospitals which had to be provided was composed of those required for the reception and care of the sick and wounded from overseas. That these would be numerous became early apparent from the experience of the British and French. It was finally decided that provision would have to be made for 5 per cent casualties and 2 per cent sickness, the percentage referring to total number of troops overseas and indicating the number estimated to require treatment and care on their return to the United States. This would make a total of beds equal to 7 per cent of the troops. It was estimated that a turnover could be made on the average every six months; a 3½ per cent basis was therefore adopted as the hospitalization necessary for returning sick and wounded.[17] As the country had been divided into 61 draft districts, the policy was adopted of providing hospitals in each draft district, the number of hospitals and beds to be in proportion to the size of the draft in each district. How best to procure these hospital facilities was given careful consideration. An incomplete but instructive survey of the civil hospitals of the country was made by questionnaire early in 1917, which apparently showed that 21,435 beds were at once available, while about 48,000 beds could be made available on a week's notice,[18] but these, for the most part, were in small units and located in widely scattered and inconvenient places. Lists of these hospitals were sent to all department surgeons with instructions to use them, whenever necessary, during the mobilization of troops and at any other time.[19] After due consideration, however, it was decided that the use of civil hospitals for the care and treatment of troops was not feasible because of the uncertainty of the supply of beds, the impracticability of taking over entirely civil hospitals in sufficient number without working a hardship on the civil population, and because of the difficulty in operating a military and a civil organization in the same institution. Repeated representations were made by committees of one organization or another urging the use of civil hospitals, and offering advice of one sort or another as to how best to meet the situation, but the Hospital Division decided that a program must be developed for obtaining a sufficient number of hospitals absolutely under military control, and it proceeded to develop such a program.

It was decided, after careful study of all aspects of the situation, to provide these hospitals by the following measures:[20]

By the use of existing military posts.—It was believed, and subsequently it was determined, that a limited number of Army posts were suitably located to make them desirable for use as hospitals. This plan, as shown by the hospital lists, proved to be economical and fairly satisfactory.

By the use of buildings to be obtained by lease.—The spirit of patriotic service which swept the country prompted many individuals to offer their properties to the War Department for hospital purposes. These offers included properties of every conceivable kind, such as loft buildings, department stores, sanatoria, hotels, private estates, hospitals, and private homes, including truck gardens and chicken yards. Most of these offers referred to properties entirely unsuitable for hospital purposes. Upon investigation, however, it was found that many properties, such as hotels, loft buildings, sanatoria, and other large buildings, could be utilized to advantage, and could be obtained and converted into hospitals much more quickly and at less cost than barrack hospitals could be built. Accordingly, dependence was placed in greatest degree upon this source of supply, although many of these buildings required extensive remodeling and additional construction.

By new construction.—In a few instances, for special reasons relating to location, special requirement, climate, etc., new frame hospitals of the barrack type were decided upon and the necessary action taken which led to their completion in time for service.

As already mentioned, the hospitals for returning sick and wounded were to be located in the various draft districts in numbers and of capacity commensurate with the size of the draft of that district. This policy was adopted in order that men invalided home might be returned to their home district, so far as possible, and because it was felt that any other policy, no matter what its merit, would be bitterly opposed.

One class of hospitals was a new departure, namely, the embarkation hospitals located at the shipping points in and around New York City and Newport News, Va. These hospitals were necessary because of the large numbers of sick who had to be left behind at the ports when their organizations sailed. They were used also for the reception of sick and wounded from abroad. After the armistice, when the movement of the sick and wounded became very rapid, some of them were designated as debarkation hospitals.

TYPES OF HOSPITALS.

The hospitals at the cantonments or mobilization camps were called base hospitals, which, being under the jurisdiction of the camp commander, were in reality camp hospitals and should have been so designated. Aside from the port of embarkation hospitals, the hospitals for the sick and wounded from overseas were, in the main, general hospitals in every sense of the word; "general" in the sense in which the word is used in civil life, designating a hospital in which all classes of patients are received, and "general" in the Army usage, as designating a hospital under the direct control of the Surgeon General. It was attempted to make all of these hospitals general hospitals in the Army sense, where this could properly be done, as it was found that greater efficiency resulted, through the nature of their function, than in the department hospital. The majority were general hospitals.

In conforming to the very desirable program of returning soldiers to hospitals near home, it was found to be advantageous to organize the majority of them for handling all kinds of medical and surgical work; in other words, as general hospitals in the sense of civil usage.

In some instances it was necessary to organize special hospitals for the treatment of special conditions, e. g., those for the treatment of tuberculosis, where segregation and climate were factors to be considered; for the treatment of orthopedic conditions; for oral and plastic surgery; and for mental diseases. The reasons for special hospitals for the tuberculous and the insane are self-evident. Special hospitals for orthopedic cases and for amputation cases were necessary because it was impossible to assign competent orthopedic surgeons to all hospitals and impossible to set up the necessary shops for the manufacture of special prostheses and artificial appliances in all. For the same reason it was not feasible to provide for oral and plastic surgery in all hospitals. Specialists in this work were relatively few and could be supplied to only a few centers. In some instances, the entire hospital was given over to special work, such as caring for mental, tuberculous, and orthopedic patients. In others, special departments were emphasized in general hospitals. The types of hospitals as determined by the nature of the work done is best shown in the classification which follows in the section discussing the distribution of patients.

Another type of special hospital was the so-called reconstruction hospital, in which special personnel, shops, and apparatus were supplied for the purpose of providing occupational therapy for disabled soldiers who required such treatment as a part of physical reconstruction and reeducation. Provision was made for such work in selected hospitals, usually located in various draft districts. In some instances special reconstruction hospitals were established, which, with their shops and classrooms, were, in effect, training schools rather than hospitals.

THE NUMBER OF HOSPITALS AT THE SIGNING OF THE ARMISTICE.

On armistice day there were in the United States, excluding the small post and camp hospitals, 92 large hospitals with a bed capacity of 120,916 beds,[21] and additions authorized or under construction to furnish a total capacity of 147,636 beds. This represented 89 new hospitals which had been opened, many of them of new construction throughout, all of which had to be staffed, equipped, and organized.[22]

In addition to these hospitals already in operation, projects were under way, buildings had been leased, and work had been begun which would have added some 60,000 more beds to the capacity of the Army hospitals. Two procurement boards,[23] each composed of a representative from the Hospital Division, Surgeon General's Office, the Construction Division, and the Real Estate Branch of the Division of Purchase, Storage and Traffic Division of the War Department, were also in the field with a long list of middle and far western cities to be visited for the purpose of obtaining more hospitals. There is no doubt but that ample hospital facilities would have been available to meet all needs had the war continued.

Immediately upon the cessation of fighting a careful inventory of facilities was taken and an estimate of requirements made. The conclusion reached was that ample hospital bed capacity existed to meet all needs. Accordingly, all new projects not well advanced or nearing completion were abandoned. This meant the saving of millions of dollars to the Government, and subsequent developments proved that the right decision had been made. At no time was there a shortage of beds, as can be ascertained by examination of the bed reports.[24]

ADMINISTRATION OF THE HOSPITAL DIVISION.

The administrative branch of the Hospital Division was the executive section,[25] maintaining liaison with The Adjutant General's Office and with general direction of the administration of all hospitals in the United States under control of the Surgeon General. It had charge of all routine records, reports, and correspondence pertaining to the administration of military hospitals. It attempted to coordinate, standardize, and promulgate the methods of administration to be followed at such hospitals. This section also determined the personnel, saw that the professional divisions made up the special staffs required for the different hospitals, kept track of officers who showed administrative ability, and selected and assigned all commanding officers to hospitals.

A system of circular letters containing information for the guidance of commanding officers was inaugurated, by means of which desirable features obtaining in some hospitals were brought to the attention of the officers in command of others. Similarly, undesirable or unsatisfactory methods of administration were eliminated and a more uniform system of administration accomplished. Conferences were held at the Surgeon General's Office, to which groups of commanding officers were ordered. At these conferences questions of hospital administration, problems peculiar to the different types of hospitals, and obscure or important points were discussed. These conferences were profitable in bringing about a better understanding of the policy of the Surgeon General as represented by the Hospital Division, creating confidence and enthusiasm, and standardizing administrative procedure.

An officer of extensive experience was designated as follow-up officer. It was his duty to follow up all requisitions from the various hospitals, to see that they reached the proper division or department, and to follow the action, in order to insure promptness by correcting any misunderstanding and by impressing the urgency of each case upon those responsible for action. This officer examined all inspection reports received from the Inspector General and from the medical inspectors of the Division of Sanitation. He analyzed all such reports, called for an explanation from the commanding officers concerned, and required reports of the steps taken to correct faulty conditions. His analyses were often the basis of circulars issued to the various hospitals calling attention to errors to be avoided and to methods of proved worth to be adopted.

The Army Nurse Corps in the beginning was under the Personnel Division, but naturally came into intimate contact daily with the Hospital Division. Subsequently it came to function as a part of the Hospital Division and so continued until the reorganization of the Surgeon General's Office after the armistice, when it reverted to the Personnel Division. (See Chart XXIV.) Inasmuch as it functioned as part of the Personnel Division for the major part of the war period, its history will be found in the chapter devoted to that division.

The Army School of Nursing came into existence to meet the need for nurses and nurses' aides, being an entirely new undertaking. This, like the Army Nurse Corps, belonged properly in the Personnel Division, but because of the constant contact with the Hospital Division it functioned for a time under this division. In course of time it reverted to its proper place in the Personnel Division.

Two or three well-trained nurses of large executive experience in the best civil hospitals were assigned to duty as inspecting nurses. They systematically visited the various Army hospitals, inspected them thoroughly, particularly with regard to the nursing, noting any points with reference to administration of the wards which required comment, and reporting their findings to the Surgeon General.[26] The reports so obtained did much to stimulate better organization, better administration, and better care of the sick. These reports were often much more to the point and much more constructive in criticism than those from any other source. As a result of these reports, it was plain that, with the pick of the nursing profession available, the system of holding examinations for chief nurses was not the best way to obtain competent chief nurses, since the best would seldom take the examination. The most efficient method was found to be the selection of those known to have had the best training and the most successful experience.

HOSPITAL TRAINS.

At the beginning of the war the Medical Department had at its disposal one hospital train consisting of 10 cars, viz, one kitchen and personnel car, three 16-section patient cars, three bed cars, one operating car, one storage and baggage car, one officers' car.[27] These cars were all of wood construction, consisting of old Pullman cars remodeled for service on the Mexican border. The capacity of this train was 225 patients and 31 personnel. It soon became evident that it would be necessary to have additional trains in order to handle the sick and wounded from the port of debarkation. In October, 1917, request was made by the Surgeon General for an appropriation sufficient to construct three additional trains of six cars each, to which was added, one to each train, a bed car from train No. 1. On February 13, 1918, authority was obtained for the purchase of these 18 additional cars, and in June, 1918, the cars had been purchased, remodeled, and placed in service. This made a total of four trains of seven cars each, with a capacity of 141 patients and 31 personnel for each train.[27]

After a short experience it was found that a much larger equipment would be necessary and that the complete trains were not the best solution of the problem. It was decided to use unit cars,[27] so called because each car was a complete unit, with a kitchen, toilets, beds for patients and for a limited personnel. After a careful study of the situation, a request was made in October, 1918, for authority to purchase 20 cars and to have them remodeled into unit cars.[27] This authority was granted on October 25, 1918. The matter was then taken up with the Pullman Co., and, after considerable correspondence relative to increased cost, it was found that 20 steel underframe Pullman parlor cars were available and could be overhauled and remodeled in a short time. The cars were all completed and in service by January 21, 1918.[27] They were fitted with Glennan adjustable bunks, large kitchens, refrigerators, axle devices, and lighting system.[28] Ten of these unit cars were sent to the port of Hoboken and 10 to Newport News. A unit car provided cooking facilities not only for patients carried by it alone, but for a considerable excess over that number. It should be remembered that overseas patients were very widely distributed in hospitals throughout the country. The plan followed was to put one unit car with a maximum of four sleepers. The unit car proceeded to the final point of destination, feeding all patients en route. The other cars, however, were dropped off as soon as the particular destination of its patients was reached. Sometimes 3 unit cars, or even more, would be found in a train when it left a port of embarkation, such a number, in fact, as was necessary to insure all patients being supplied with cooking factilities to destination, though the original train had been broken up long before that time.

While waiting for the unit cars to be delivered, provision had to be made for the immediate problem of handling the incoming patients. They were being transported in ordinary Pullman or tourist sleepers, but very unsatisfactorily, as the proper facilities for providing them with food were not always available. Therefore authority was obtained and in the latter part of November, 1918, two kitchen tourist cars, two hotel kitchen cars, and six private cars with kitchens were secured from the Railroad Administration, at a rental of $15 per day each, and were sent to the port of Hoboken.[27] At the same time and on the same terms seven kitchen tourist cars, one hotel car, and two private cars were obtained and sent to Newport News. These were used as unit cars. It was intended to release these cars as soon as the unit cars were delivered, but the influx of patients was so great that they were retained until June, 1919, when they were all turned back. With this total equipment of four complete trains, 20 unit cars, and 20 leased kitchen cars the situation was well covered.

CENSUS AND DISTRIBUTION OF PATIENTS.

The section for the census and distribution of patients functioned as indicated by the title. From the beginning the division received daily reports of the occupied and vacant beds in the various hospitals, so that exact information was obtained daily as to available bed capacity. This became a matter of much greater importance when the return of sick and wounded through the ports of embarkation became very rapid, as it did immediately after the armistice.

Up to this time the distribution of such patients was a comparatively simple matter; in fact, the transfers from camps to general hospitals were much heavier than those from the ports. When the big movement homeward began it was a different story. The debarkation hospitals at the ports had to be kept free and the large numbers of patients had to be moved to the hospitals in the interior most appropriate for each case. Heretofore it had been a routine procedure for the port surgeon to telegraph to this office a recommendation for transfer; and after this was approved, the transfer was accomplished. It now became necessary to provide a definite system by which the patients could be quickly differentiated and assigned at the ports to hospital, according to the diseases or injuries treated therein. The list of hospitals designated for the reception of overseas patients was revised accordingly.[29]

Working by this classification the lists for transfer were made, the patients being assigned according to disease or injury and the geographical area from which they came. These lists were transmitted by telephone to the distribution officer of the Hospital Division, each list being read off to him in detail. This he checked up immediately to ascertain that beds were available and that no error had been made, and gave authorization at once or as soon as necessary correction had been made. This check and authorization took only a few minutes, rarely more than an hour. The telephone conference was later confirmed by wire, the list being wired and the authorization likewise. By arrangement with The Adjutant General's Office, the distribution officer was empowered by the post surgeon to authorize transfers, confirming them later by telegram prepared for signatures, and on file in The Adjutant General's Office.[30] To understand how well this worked in this office it must be remembered that the census and distribution officer of the Hospital Division received every morning a telegram from every military hospital of large size in the United States, giving the number of beds occupied and the number vacant. This was then checked up with the number en route or previously authorized to be sent to the different hospitals, and with the available beds as of that date accurately determined. When the rapid return flow from overseas was in progress, this section received copies of cables giving the ships which had sailed and the number of patients on board, roughly differentiated as surgical, medical, mental, etc., which made it possible to prevent congestion at the ports at all times. An effort was made to have the system changed and authority given to allow the port surgeons to make transfers without reference to the Hospital Division, except that the ports were to be given the bed report daily. This effort was thwarted because experience had demonstrated the necessity of a check, it having been noted that, probably from unavoidable haste, patients were often assigned to hospitals not suitable to their care, which meant that if the transfer was accomplished, a retransfer was necessary, involving expense, delay, and discomfort, if not actual suffering. Furthermore, It was evident that with transfers taking place from between 80 and 90 different hospitals of the interior and two ports, without check in a central office, congestion in some hospitals would be inevitable. The clearance through the Hospital Division was subsequently maintained throughout. The bed report was made up weekly and distributed to the ports and to all officers concerned, reaching finally a circulation of 300 copies weekly.

Shortly after the cessation of hostilities a cable was dispatched to the chief surgeon, American Expeditionary Forces, asking for information as to the total number of sick and wounded in hospitals overseas, the total number of these who would probably require hospital treatment on their arrival in the United States, and the number to be expected monthly. Information was given to the effect that 10,000 could be expected four months running. This word was received during the latter part of November, 1918, but for various reasons the number was greatly increased, and on December 20, 1918, 353 patients were received and distributed; on January 23, 1919, 419; on February 18, 837; on March 23, 107.[31] Between November 11, 1918, and May 1, 1919, approximately 130,000 patients were received and distributed without any serious complication or breakdown of the service. During the period from July 1, 1918, to June 30, 1919, 151,845 patients were received at ports of embarkation from overseas. During the year beginning July 1, 1918, and ending June 30, 1919, this section authorized the transfer of 33,934 patients from hospital to hospital of the interior, 97,271 overseas patients from the port of Hoboken, N. J., and 37,564 from Newport News, Va.[31] The transfer of this large number of patients from one hospital of the interior to another was due to the following factors: (*a*) The transfer of all patients requiring one or more months' treatment from base to general hospitals, in order that personnel at the former might be reduced; (*b*) the transfer from one general hospital to another, in order that the personnel of general hospitals might be reduced.

All in all the system of control instituted by the census and distribution section of the Hospital Division worked efficiently, as is demonstrated by the numbers handled and the fact that they were assigned promptly and with no breakdown, even under the most severe pressure.

PLANNING AND CONSTRUCTION.

The Planning and Construction Branch, later designated Procurement Section of the Hospital Division, prepared plans for various hospitals and units of hospitals, maintained liaison with all agencies instrumental in producing hospital space and contemplated users, and expedited all hospital projects, after the section was well organized. Not until early in 1918 was this phase of the work well organized, the delay being due to faults in the general organization of the Surgeon General's Office. For a time more or less confusion existed in consequence of the organization of the Division of Physical Reconstruction and the assumption, by the chief of that division, of the duties of inspecting and leasing properties for hospital purposes. This arrangement was in no way satisfactory, and finally the Procurement Section was organized. This section then prepared all estimates of requirement for the fiscal year, including all improvements and additions; studied the requests for construction received from the many hospitals, ports, and camps; recommended the action to be taken; and obtained the additional hospital facilities required. Through this section the necessary action to be taken was recommended to the Construction Division of the War Department, with which close and constant liaison was maintained by an officer from this section, whose duty it was to follow all projects through the various stages of construction. This liaison became a very important and necessary procedure because of the complicated process through which all construction projects had to pass. After plans had been developed in outline and further requirements noted, the project went to the Construction Division. Here the plans were perfected by architects and engineers developing the detailed plans and specifications. Before a project was released from that department, it had to receive the approval and signatures of six officers, including the chief of the division, after which it was sent to the Director of Finance, by whom, if the funds were available, clearance papers were issued. During the latter part of 1918, when prompt action was imperative and when the scarcity of materials and labor was greatest, each project involving more than $25,000 had to pass also through the War Industries Board and the Purchase, Storage, and Traffic Division, General Staff.[23] It was then finally returned to the Construction Division of the War Department, from there going to the General Staff for final authorization of the Secretary of War. After a project was authorized and work started, the liaison officer conferred with the constructing quartermaster at frequent intervals in order to supply full information as to requirements and to promote prompt execution of the work. The Procurement Section also initiated all action for the leasing of property and later for the cancellation of leases.

A small drafting room was maintained in the Hospital Division of the Surgeon General's Office, where all original sketches for hospital work were prepared. Later, when speed was imperative, five and six draftsmen were sent into the field by the Hospital Division and plans for the remodeling of buildings and for additions were prepared on the ground. The work of the Construction Division of the War Department, so far as related to the work of this office, was executed almost entirely under the advice of the architects of this section.

HOSPITALIZATION AFTER THE ARMISTICE.

Immediately after the armistice became effective, consideration was given to the readjustment of the program. Action was based upon the following factors: The number of sick and wounded overseas who would probably require hospital treatment on arrival in the United States and the number to be expected monthly, according to cable advice (which, however, proved very misleading); the number in hospitals in the United States and the strength of the forces in the United States; and the program of demobilization as set forth by the War Department.

In consideration of the decision to demobilize the reserve troops in the United States as rapidly as possible, thereby releasing thousands of beds in the cantonment hospitals, it was held that sufficient bed capacity was available for all needs by designating hospitals in the cantonments about to be abandoned as hospitals for overseas cases. Accordingly, as before stated, all projects not yet begun or nearing completion were abandoned and steps were taken to cancel leases or to make such other adjustments as were necessary.

Many of the base hospitals at the camps were designated for overseas cases and a new schedule for assignment of such cases was prepared. This policy resulted in the saving of millions of dollars, and it furnished adequate bed capacity for all needs. All hospitals not designated for overseas cases were reduced in capacity and personnel at intervals, as circumstances warranted. After the first few months in 1919, when the pressure had become less, the policy was adopted of abandoning all leased properties as rapidly as possible and concentrating, so far as was practicable, in Government-owned property. From this time on, bed capacity and personnel were reduced in all hospitals, whenever possible, in order to facilitate the release of officers and enlisted men of the Medical Department in conformity with the general plan of demobilization. This policy was determined first in the Hospital Division and then discussed in the general "round-table" conference held daily by the Surgeon General. As a result of the general policy above outlined, a gradual reduction in the number of both base and general hospitals was effected, and by May 24, 1919, most hospitals on leased properties had been discontinued. On that date, in order to secure uniformity of thought and action in reference to demobilization and care of chronic sick, it was agreed that the following general hospitals would be considered the most permanent:[32]

Army and Navy General Hospital, Hot Springs, Ark.
Letterman General Hospital, San Francisco, Calif.
U. S. Army General Hospital No. 6, Fort McPherson, Ga.
U. S. Army General Hospital No. 19, Oteen, N. C.
U. S. Army General Hospital No. 21, Denver, Colo.
U. S. Army General Hospital No. 26, Fort Des Moines, Iowa.
U. S. Army, General Hospital No. 31, Carlisle, Pa.
Department base hospital, Fort Sam Houston, Tex.

It was agreed that the general hospitals next most permanent which would operate for a sufficient time after July 1, 1919, to care for chronic cases were:[32]

U. S. Army General Hospital, Fort Bayard, N. Mex.
U. S. Army General Hospitals Nos. 2, 3, 8, 20, 28, 30, 41, 42, 43.
Base hospital, Fort Riley, Kans.

The geographical distribution of the patients, which had been consistently followed up to this time, was now to be disregarded, if beds in the proper geographical area were not available, when such patients were cleared from the ports; otherwise it would be followed as heretofore. While considerations arose from time to time to interfere somewhat with this program, it was followed in the main. Adequate care, personnel, location in relation to population, and cost of maintenance were the most important considerations in deciding upon abandonment or retention. Looking ahead into 1920, it was believed that it would be possible to concentrate all the sick and wounded in a few well-appointed hospitals in the Northern and Eastern States near New York City, Chicago, Baltimore, Washington, and San Francisco.

The United States Public Health Service required hospitals for the care of discharged soldiers and sailors who had become beneficiaries of the War Risk Bureau under the provisions of the law. The Hospital Division cooperated closely with the public-health authorities and in accordance with the provisions of the act of Congress of March 3, 1919, the following hospitals had been turned over intact to the Public Health Service by July, 1919:[33]

	Bed capacity.
Base hospital, Camp Beaureguard, La	2,144
Base hospital, Camp Cody, N. Mex	1,289
Base hospital, Camp Fremont, Calif	1,156
Base hospital, Camp Hancock, Ga	1,604
Base hospital, Camp Joseph E. Johnston, Fla	816
Base hospital, Camp Logan, Tex	1,156
Base hospital, Camp Sevier, S. C	1,396
General hospital No. 13, Dansville, N. Y	288
General hospital No. 15, Corpus Christi, Tex	262
General hospital No. 34, East Norfolk, Mass	350
General hospital No. 10, Boston, Mass	750
General hospital No. 32, Chicago, Ill	530
General hospital No. 40, St. Louis, Mo	531
Norwegian Deaconesses Hospital, Brooklyn, N. Y	250
Total	12,522

The Public Health Service had also indicated a desire to take over the following:[34]

	Beds.
General hospital No. 16, New Haven, Conn	500
General hospital No. 24, Parkview, Pittsburgh, Pa	700
General hospital No. 36, Detroit, Mich	919
Total	2,119

On August 8, 1919, the following tentative priority schedule for abandonment and reduction in general hospitals was agreed upon,[35] subject to change on all dates subsequent to September 8, 1919:

Total beds available in general hospitals August 8, 1919	33,414
Number of beds in general hospitals now closing and which will be entirely closed by September 1	3,433
	29,981

Therefore, the number 29,981 includes the number of general hospital beds to be kept permanently as well as those to be ordered abandoned. It was believed that 3,750 beds (which is over 1 per cent of a 300,000 Army) was a sufficient number to hold permanently. This short table shows this selection as made.

	War capacity.	Reduce.	Hold as permanent.
Walter Reed	2,000	500	1,500
Letterman	2,220	1,500	700
Hot Springs	266	16	250
No. 19 (T. B.)	1,300	800	500
No. 21 (T. B.)	1,603	803	800
Total	7,369	3,619	3,750

Priority schedule.

Abandon U. S. Army general hospitals (number).	Date.	Number of beds abandoned.	Beds remaining in hospital.	Total beds abandoned.	Total beds remaining.
Abandon 28	Aug. 28	1,000—Fort Sheridan	3,302	1,000	29,981
Abandon 6	Aug. 8	1,000—Fort McPherson	1,860	2,000	27,981
Abandon 30	...do	500—Plattsburg Barracks	699	2,500	27,481
Abandon 28	Sept. 30	500—Fort Sheridan	2,802	3,000	26,981
Abandon 2	...do	1,000—Fort McHenry	1,900	4,000	25,981
Abandon 30	...do	699—Plattsburg Barracks	0	4,699	25,282
Abandon 31	Oct. 15	900—Carlisle, Pa	0	5,599	24,382
Abandon 3	...do	1,550 Colonia, N. J	0	7,149	22,832
Abandon 28	...do	500—Fort Sheridan	2,302	7,649	22,332
Abandon 6	...do	500—Fort McPherson	1,360	8,149	21,832
Abandon 20	...do	400 Whipple Barracks	0	8,549	21,432
Abandon 1	...do	830—Williamsbridge	0	9,379	20,602
Abandon 26	...do	1,060—Fort Des Moines	0	10,439	19,542
Abandon 4	Oct. 31	250—Fort Porter, N. Y	0	10,689	19,292
Abandon 8	...do	1,000—Otisville, N. Y	0	11,689	18,292
Abandon 42	...do	1,000—Spartanburg, S. C	0	12,689	17,292
Abandon 28	...do	1,000—Fort Sheridan	1,302	13,689	16,292
Abandon 2	Nov. 30	800—Fort McHenry	1,100	14,489	15,492
Abandon 2	Mar. 31	1,100—Fort McHenry	0	15,589	14,392
Abandon Bayard	...do	1,000	0	16,589	13,392
Abandon 19	...do	800—Oteen, N. C	500	17,389	12,592
Abandon 21	...do	803—Denver, Colo	800	18,192	11,789
Abandon 7 [a]	June 30				
Abandon 43	...do	1,349 Hampton, Va	0	19,541	10,440
Abandon 6	July 31	1,360—Fort McPherson	0	20,901	9,080
Abandon 28	Aug. 30	1,302—Fort Sheridan	0	22,203	7,778
Abandon 41	Sept. 30	2,012—Fox Hills, N. Y	0	24,215	5,766
Letterman	...do	1,500	700	25,715	4,266
Hot Springs	...do	16	250	25,731	4,250
Walter Reed	Oct. 30	500	1,500	26,231	3,750

[a] No beds; merely lease and control.

The 3,750 held for permanent use are shown distributed in the table just above this schedule. The highest number of available beds was shown on the report of October 12, 1918, there being on that date 173,505 beds, of which 131,213 were occupied by patients.[36] This was during the influenza outbreak, when many of the hospitals were overcrowded or enlarged by the use of barracks.

On November 11, 1918, the date of the armistice, there were in operation 40 general hospitals, 35 base hospitals, 14 debarkation hospitals, and 3 department base hospitals, with a total bed capacity of 120,916 beds and 76,964 patients in hospitals.[37] By October 3, 1919, as a result of the policy set forth above, the following hospitals were in operation, as shown by the bed report of that date, from which, by comparison with earlier lists, an accurate idea can be obtained of the rapidity of abandonment:[38]

War Department, Surgeon General's Office, Washington, October 9, 1919.

Prepared by Census Section, Hospital Division.	Bed situation.			Hospitals caring for overseas patients and others requiring general hospital treatment.
	Occupied.	Vacant.	Total.	
Army and Navy General Hospital, Hot Springs, Ark	129	137	266	
General Hospital, Fort Bayard, N. Mex	948	52	1,000	
Letterman General Hospital, San Francisco, Calif	1,452	748	2,200	
Walter Reed General Hospital, Takoma Park, D. C	1,657	343	2,000	
General Hospital No. 1, Williamsbridge, N. Y	426	0	426	To be closed Oct. 15.
General Hospital No. 2, Fort McHenry, Md	1,672	1,228	2,900	
General Hospital No. 3, Colonia, N. J. (Rahway)	899	0	899	Railroad station to be closed Oct. 15.
General Hospital No. 4, Fort Porter, N. Y	106	144	250	
General Hospital No. 6, Fort McPherson, Ga	1,340	540	1,880	
General Hospital No. 7, Roland Park, Md	-----	-----	-----	Reconstruction School for Blind.
General Hospital No. 8, Otisville, N. Y	455	545	1,000	
General Hospital No. 19, Oteen, N. C. (Biltmore)	1,105	195	1,300	Railroad station.
General Hospital No. 20, Whipple Barracks, Ariz	326	74	400	
General Hospital No. 21, Denver, Colo	1,280	313	1,593	
General Hospital No. 26, Fort Des Moines, Iowa	511	0	511	To be closed Oct. 15.
General Hospital No. 28, Fort Sheridan, Ill	2,499	801	3,300	
General Hospital No. 31, Carlisle, Pa	419	481	900	
General Hospital No. 41, Fox Hills, Staten Island, N. Y	1,725	287	2,012	
General Hospital No. 43, Hampton, Va	990	10	1,000	
Base hospital, Fort Sam Houston, Tex	920	280	1,200	
Total	18,859	6,178	25,037	

Hospitals under port of embarkation, Hoboken, N. J.

	Occupied.	Vacant.	Total.
Base hospital, Camp Merritt, N. J	547	1,326	1,873
Embarkation Hospital No. 1, Hoboken, N. J. (St. Mary's)	32	388	420
Total	579	1,714	2,293
Recapitulation:			
General hospitals	18,859	6,178	25,037
Ports of embarkation	579	388	420
	19,438	7,892	27,330

PERSONNEL.[b]

(April, 1917, to December, 1919.)

Noble, Robert H., Maj. Gen., M. D., chief.
Glennan, J. D., Brig. Gen., M. D., chief.
Brooke, Roger, Col., M. C., chief.
Shaw, Henry A., Col., M. C., chief.
Smith, Winford H., Col., M. C., chief.
Kramer, Floyd, Lieut. Col., M. C., chief.

Babcock, Warren L., Col., M. C.
Coburn, jr., H. C., Col., M. C.
Hart, W. L., Col., M. C.
Johnson, H. H., Col., M. C.
Jones, Percy L., Col., M. C.
Baldwin, L. B., Lieut. Col., M. C.

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[b] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Baylis, James E., Lieut. Col., M. C.
Daugherty, John E., Lieut. Col., M. C.
Evans, H. M., Lieut. Col., M. C.
Hornsby, John A., Lieut. Col., M. C.
King, Edgar, Lieut. Col., M. C.
Northington, Eugene C., Lieut. Col., M. C.
Owen, L. J., Lieut. Col., M. C.
Bachmeyer, A. C., Maj., M. C.
Bagley, Charles, jr., Maj., M. C.
Brown, C. L., Maj., S. C.
Crane, A. G., Maj., S. C.
Cutler, H. W., Maj., S. C.
Eckels, L. S., Maj., M. C.
Granger, F. B., Maj., M. C.
Kerns, H. N., Maj., M. C.
Murray, William K., Maj., M. C.
Perry, C. H., Maj., S. C.
Richardson, H. K., Maj., M. C.
Sexson, J. A., Maj., S. C.
Tandrop, Otto, Maj., S. C.
Voorhees, S. F., Maj., S. C.
Wyeth, Nathan C., Maj., S. C.
Allen, L. M., Capt., M. C.
Amthor, Franklin P., Maj., Signal Corps.
Bayliss, M. W., Capt., S. C.
Boyd, John G., Capt., S. C.
Burnham, A. W., Capt., Infantry.
Christensen, Jens, Capt., S. C.
Gillette, Leon N., Capt., S. C.
Johnson, John B., Capt., M. C.
Kettell, R. H., Capt., S. C.
Palmer, W. E., Capt., S. C.
Sands, John R., Capt., S. C.
Stone, Calvin P., Capt., S. C.
Van Houten, L. H., Capt., S. C.
Woodbridge, C. H., Capt., S. C.
Appenfelder, Fred A., First Lieut., Signal Corps.
Clymer, H. M., First Lieut., S. C.
Harlan, C. L., First Lieut., S. C.
Westrum, John L., First Lieut., Infantry.
Woodruff, W. H., Second Lieut., S. C.

REFERENCES.

(1) Manual for the Medical Department, 1916, pars. 294, 365*h*.
(2) Annual Report of the Surgeon General, United States Army, 1918, 304 et seq.
(3) Ibid., 313.
(4) Memo., S. G. O., June 14, 1917, for Chief, War College Division, General Staff. Subject: Base Hospitals. On file, Record Room, S. G. O., 172158–17 (Old Files).
(5) Circular letter, November 11, 1917, S. G. O. On file, Record Room, S. G. O., 211 (Specialists).

(6) Letter from the Adjutant General to the Surgeon General, September 1, 1917. Subject: Authority to increase size of Base Hospitals. On file, Record Room, S. G. O., 320.2–1 (Base Hospitals) J. Also, 172158 (Old Files).

(7) Letters and telegrams from the Surgeon General to the C. O., various base hospitals, different dates. On file, Record Room, S. G. O., 370.01 (Base Hospitals), J.

(8) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1337.

(9) Letter, Surgeon General to The Adjutant General, December 6, 1917 (requesting authority); second indorsement, The Adjutant General to the Surgeon General, December 28, 1917 (authorization). On file, Record Room, S. G. O., 322.3 (Medical Units).

(10) Correspondence. On file, Record Room, S. G. O., 632.1

(11) Annual Report of the Surgeon General, United States Army, 1918, 305.

(12) Memo. (undated). Subject: Recognition of Sections Representing Specialists. On file, Record Room, S. G. O., 024.1 (Administration of S. G. O.).

(13) Letter, Surgeon General to commanding officer, base hospital, December 18, 1917. Subject: Enlisted Men. On file, Record Room, S. G. O., 320.22–1. Annual Report of the Surgeon General, United States Army, 1918, 30,307. Circular letter (956), February 2, 1918, Surgeon General to commanding officer, par. 11. Subject: Nurses. On file, Record Room, S. G. O., 322.15–2. Circular letter (A–169), Surgeon General, United States Army, to commanding officer, base hospital, March 7, 1918. Subject: Staff Organization. On file, Record Room, S. G. O., 322.15–2. Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1153 (B–Personnel).

(14) Letter, December 14, 1917, Surgeon General to commanding officer, base and general hospitals. On file, Record Room, S. G. O., 353.1.

(15) Manual for the Medical Department, 1916, par. 279 (*b*).

(16) Ibid. Changes No. 7, March 8, 1918, p. 104, par. 313.

(17) Annual Report of the Surgeon General, United States Army, 1918, 305, 306.

(18) Statistical report (bed capacity) April 27, 1918. On file, Record Room, S. G. O., Weekly Report File (Statistical Report of Hospitals).

(19) Letter from the Surgeon General to department surgeons, June 13, 1917. Subject: Civil Hospitals. On file, Record Room, S. G. O., 182143 (Old Files). Weekly Report, Hospital Division, S. G. O., September 9, 1917. On file, Record Room, S. G. O., Weekly Report File.

(20) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1140 et seq.

(21) Ibid., 1163.

(22) Statistical bed reports, Hospital Division, November 9, 1918. On file, Record Room, S. G. O., Weekly Report File.

(23) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1144.

(24) Bed reports, Hospital Division. On file, Record Room, S. G. O., Weekly Report File.

(25) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1152.

(26) Inspection reports, 1917–18, Army School of Nursing, S. G. O. On file, Army Nurse Corps, S. G. O.

(27) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1154 et seq.

(28) Original plans on file, drafting room, Hospital Division, S. G. O.

(29) Revised list of hospitals designated for overseas cases. On file, Record Room, S. G. O., 701 (General).

(30) Copies of telegrams. On file, Record Room, S. G. O., File 705 (Hoboken).

(31) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1162.

(32) Ibid., 1159.

(33) Ibid., 1160.

(34) Ibid., 1161.

(35) Tentative priority schedule for abandonment and reduction in general hospitals. On file, Record Room, S. G. O., 323.72–3.

(36) Bed report of Hospital Division, October 12, 1918. On file, S. G. O., Weekly Report File.

(37) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1163.

(38) Bed report, Hospital Division, S. G. O. On file, Record Room, S. G. O., Weekly Report File.

CHAPTER XII.

OVERSEAS HOSPITAL DIVISION.

When the United States entered the World War on April 6, 1917, the field units of the Medical Department actually organized and operating, apart from the sanitary detachments attached to combatant organizations, comprised seven field hospital companies and nine ambulance companies.[1] There were no base or evacuation hospitals in existence as a part of the Army, nor any of the highly specialized and technical units which the experience of the allied armies had demonstrated as essential to the proper functioning of the Medical Department in the field.

For several years prior to the onset of the war the American Red Cross had been organizing base hospitals and other medical units which, in time of emergency, would be available for immediate duty with the Medical Department of the Army. This work had been under the supervision of the director of military relief of the Red Cross, and conducted under the provisions of those paragraphs of the Manual for the Medical Department which deal with the subject of "Organized Voluntary Aid."[2] There were thus organized 50 base hospitals, 22 hospital units, and 45 ambulance companies.[3] These units were in every stage of preparedness; at the date of the declaration of war by the United States some were practically ready for immediate duty, while others were merely skeleton organizations. Some of the physicians attached were members of the Medical Reserve Corps, many were not, while attached attendants and nurses had no connection with the Army.

During the early period of the war while the necessary changes in the administration of the Surgeon General's Office, consequent on the declaration of war, were taking place, the duties of completing the organization and mobilization of the Red Cross units, and the organization of other medical units for service overseas, were assigned to various officers on duty in this office. The need of a definite program for this important work, however, was clearly apparent, and when the Hospital Division of the Office of the Surgeon General was created in July, 1917,[4] it was definitely charged "with the task of organizing all overseas units such as base hospitals, evacuation hospitals, ambulance companies, field hospitals, hospital trains, and hospital ships, together with the priority of their shipment, and with the designing, procuring, manning, and controlling of hospital trains, hospital cars, and laboratory cars for domestic use." The Overseas Section of the Hospital Division was organized for the performance of these duties. The activities of the Overseas Section of the Hospital Division increased to such an extent that the Surgeon General decided to establish an independent division in his office for the consideration of such subjects as had hitherto pertained to this section, together with certain other duties which had become closely allied therwith. Accordingly, the Overseas Division was created[5] (see Chart XIII) and to it was assigned the "organization of all

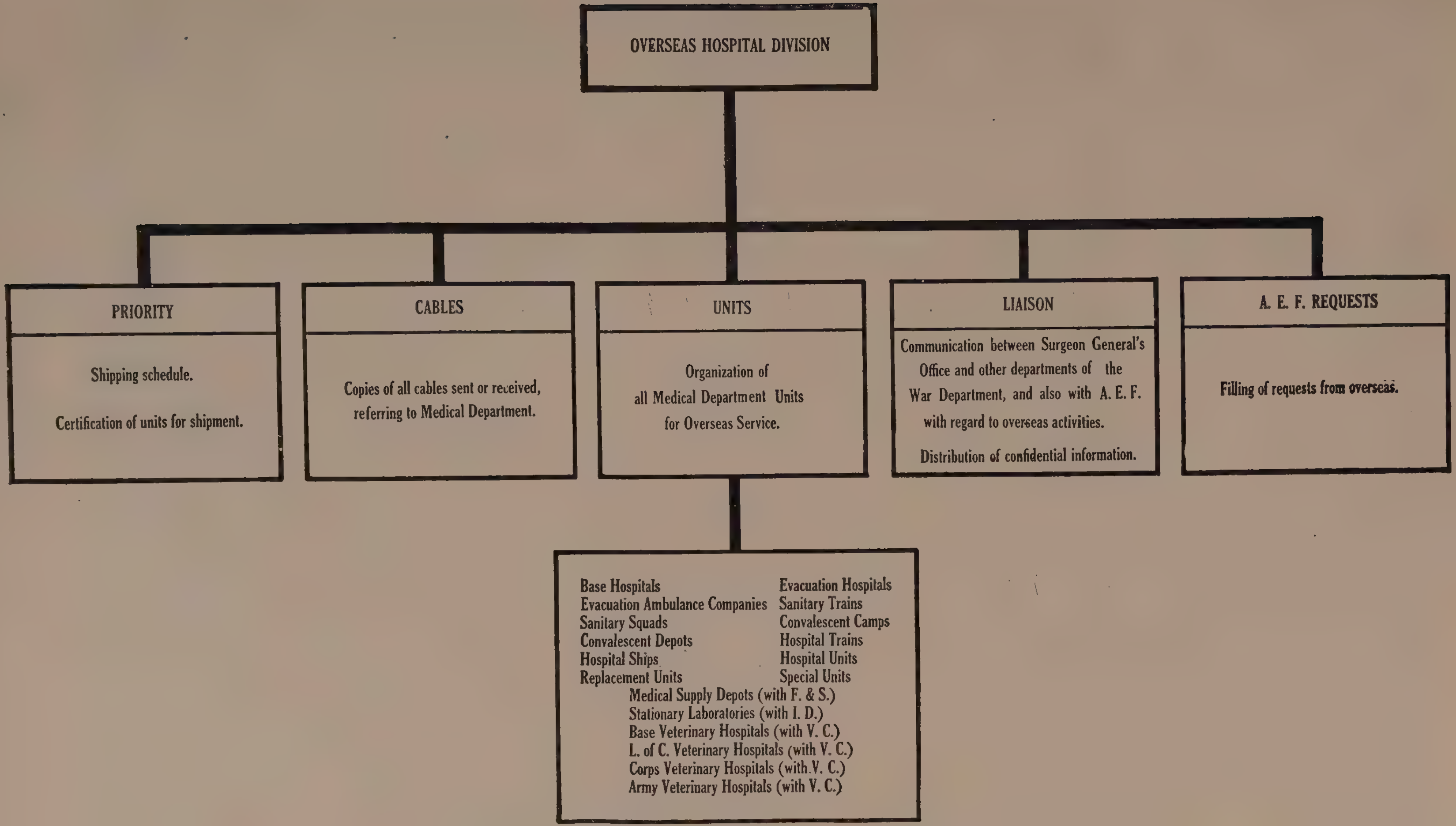
OVERSEAS HOSPITAL DIVISION
PRIORITY
Shipping schedule.
Certification of units for shipment.
CABLES
Copies of all cables sent or received, referring to Medical Department.
UNITS
Organization of all Medical Department Units for Overseas Service.
LIAISON
Communication between Surgeon General's Office and other departments of the War Department, and also with A. E. F. with regard to overseas activities.
Distribution of confidential information.
A. E. F. REQUESTS
Filling of requests from overseas.
Base Hospitals
Evacuation Ambulance Companies
Sanitary Squads
Convalescent Depots
Hospital Ships
Replacement Units
Evacuation Hospitals
Sanitary Trains
Convalescent Camps
Hospital Trains
Hospital Units
Special Units
Medical Supply Depots (with F. & S.)
Stationary Laboratories (with I. D.)
Base Veterinary Hospitals (with V. C.)
L. of C. Veterinary Hospitals (with V. C.)
Corps Veterinary Hospitals (with V. C.)
Army Veterinary Hospitals (with V. C.)

CHART XIII.—Overseas Hospital Division, Surgeon General's Office, June, 1918 medical units designated for service overseas and with the priority of their shipment; cables; liaison service between the Surgeon General's Office and the Bureau of Medicine and Surgery of the Navy Department; receiving and distributing confidential information; sanitary personnel for overseas units; female secretaries for overseas units; domestic transportation for sick and wounded." Certain of the duties included in the foregoing as not pertaining to the general functions of this division were later transferred to a more appropriate division, as will be noted.

While, from a military viewpoint, the preservation of the health of the Army is the primary consideration of the Medical Department, the care and succor of the sick and those who have been wounded in battle has always been regarded as a matter of equal importance. There can be no question that, in the public mind, the minor errors of judgment in sanitary measures may never be known, or, if so, may be overlooked, but the slightest failure to render proper care to a wounded or sick soldier is certain to be heralded widely and to cause severe criticism. The care of the sick has always received the closest attention from the Medical Department and every provision for thorough first-aid and hospital treatment has been made. With the sudden expansion of the Army from some 100,000 to over 4,000,000 and with the certainty of a great number of wounded to be cared for, it was urgent that evacuation hospitals, field hospitals, and ambulance companies be provided.

The duties delegated to the Overseas Division were most exacting, on account of the detail work required to assemble the personnel of the separate units. Frequent changes in this personnel were required. The maximum force on duty in the division consisted of 6 officers of the Medical and Sanitary Corps and 13 enlisted men and civilian clerks. The Overseas Division continued to function during the period of active operations. With the signing of the armistice, the necessity for the organization of additional units for service abroad ceased and the division was discontinued on December 1, 1918, by order of the Surgeon General.[6]

After the armistice was signed, no further combatant organizations were sent overseas, but a number of medical units which had been at the port of embarkation awaiting transportation were directed to proceed, their services being urgently needed for the care of the large number of sick and wounded at that time in the hospitals of the American Expeditionary Forces. Prompt measures were taken, however, for the demobilization of the large number of Medical Department units then in various stages of organization in this country, and the discharge of officers and enlisted men attached to them was expeditiously accomplished according to the directions issued by the War Department.

In order that the necessary hospitalization may be provided for any force on taking the field for active operations, a thorough study must be made of the proportion of casualties to be expected in view of the nature of the warfare anticipated. In addition to this, there must be a thorough understanding of the sanitary conditions of the country in which operations will be carried on. This subject was carefully studied by special officers detailed by the Surgeon General, who were greatly aided by a knowledge of the experience gained by the medical department of the allied armies through several years of actual conflict. The Surgeon General, therefore, upon a consideration of the reports submitted by these observers and after receiving estimates from the chief surgeon, American Expeditionary Forces, was able to calculate very definitely the hospitalization required. He recommended that hospital beds sufficient for 15 per cent of the troops serving abroad be provided in the hospitals of the American Expeditionary Forces.[7] The War Department approved of this allotment and directed the Surgeon General from time to time to organize the requisite number of units to provide such hospitalization, these medical units to be transported abroad progressively with the troops they were to serve.[7]

The medical units[a] organized by the Overseas Division embraced the following:[8] Hospital units, base hospitals, evacuation hospitals, evacuation ambulance companies, convalescent camps, convalescent depots, medical supply depots, stationary laboratories, mobile hospitals, mobile surgical units, hospital trains, Army sanitary trains, sanitary squads, division sanitary trains, Army ambulance sections, base veterinary hospitals, Service of Supply veterinary hospitals, corps mobile veterinary hospitals, Army mobile veterinary hospitals, special units, mobile operating unit, central optical unit, Medical Department replacement unit, neurosurgical unit, aviation medical unit, Medical Research Board, aviation ophthalmo-otological unit, anesthetic unit, museum unit, otolaryngological unit, roentgenological unit, neuropsychiatric unit, ophthalmological unit, surgical groups, medical classifying unit, rodentological unit, Medical Department repair-shop unit.

PRIORITY OF SHIPMENT.

The original program for the organization and shipment of troops abroad provided that the schedule be divided into six phases, certain designated organizations being allotted to each phase. Included among these were medical units in a definite fixed number, thus providing that the percentage of available hospital beds would remain constantly 15 per cent. No definite period of time was assigned for the transportation of each phase and frequent changes in the original schedule were rendered necessary by the requests from the commanding general, American Expeditionary Force,[9] for additional units as required.

During the year 1917 the number of vessels available for the transportation of troops from this country was limited and the total number of men sent abroad consequently small. By expeditiously completing the organization of a number of the Red Cross units previously referred to, the Medical Department was able to transfer to France during the early period of the war a larger proportion of medical units than was necessary for our forces. Certain of these units, therefore, were assigned to duty with the French and English Armies, furnishing them with much-needed medical assistance. The organization of medical units continued, and during the remainder of 1917 and the first months of 1918 medical units were available in sufficient numbers.

In the spring of 1918 repeated requests came to the War Department from the commanding general, American Expeditionary Forces, for a maximum number of combatant troops. During the remainder of the war every effort was expended to that end, with the result that frequently transportation was not available for medical units when they were reported ready for shipment. The sanitary organizations attached to divisions accompanied them when they sailed for overseas, so that the medical organization of the combatant troops was intact, but medical units for the Service of Supply, and consequently the necessary hospital facilities, began to fall short of the authorized allowance.[9] By early summer, when American troops were actively engaged in hostilities on a large scale, the accommodations for care of the sick and wounded had fallen below the desires of the Medical Department. Repeated requests for the transportation of medical units which were available were made to the War Department, but military necessity precluded this authorization.[9]

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[a] For organization of dental service, A. E. F., see Surgeon General's Report, 1919, Vol. II, 1300.

The Medical Department at this time had utilized to the full extent the facilities available for the formation of units. When transportation was finally available, the number of medical units transported left a number of camps available for the organization of other units, but, on account of the time required for their training and the delay in securing the necessary personnel, such units could not be completed in time to continue the medical organization in France at the proper proportion.

At no time during the war was the authorized allowance of enlisted men assigned to this department. At the beginning of the war, the Secretary of War directed that the strength of the Hospital Corps be 10 per cent [10] of the combatant troops which they served. The necessity of placing available men in the combatant ranks was considered paramount and, despite repeated requests from the Surgeon General, it was impossible to secure the number of men essential for the formation of the units which this department was endeavoring to organize.[11]

In the summer of 1918 the original priority schedule was suspended, and the shipment of troops was made according to a new schedule, furnished by cable from the commanding general, American Expeditionary Forces, calling for such organizations as the situation demanded from time to time.[12] Urgent requests from the commanding general and the chief surgeon, American Expeditionary Forces, for additional medical units were received and the Surgeon General made strenuous efforts to comply,[9] using all men available and combining organizations which had been partially formed in order that complete units might be ready for transportation.

ORGANIZATION OF UNITS.

Shortly after the declaration of war, medical officers' training camps were established at Camp Greenleaf, Ga., Fort Riley, Kans., and Fort Benjamin Harrison, Ind. The camp at Fort Benjamin Harrison was discontinued in the fall of 1917, the other camps continuing until the cessation of hostilities. At Camp Crane, Allentown, Pa., a camp was established for the formation of the units of the United States Ambulance Service. All these camps were under the direct control of the Surgeon General and were selected as the sites for the organization of such medical units as would be authorized by the War Department for service overseas.[13] To these camps were sent as many as possible of the officers and enlisted men entering the Medical Department during the war. They were given an intensive course of instruction in the duties expected of the personnel attached to sanitary organizations. At first no special distinction was made between the various medical officers' training camps with reference to the character of the organization to be formed therein. Later, when only the camps at Camp Greenleaf and Fort Riley were functioning, it was deemed advisable to differentiate between the character of the units to be organized in each. At Fort Riley all units which were to serve with the combatant organizations, such as divisional sanitary trains, regimental detachments, sanitary squads, and evacuation ambulance companies, were organized, while at Camp Greenleaf such units as pertained particularly to the Services of Supply were mobilized.

The Red Cross base hospitals, previously referred to, were ordered mobilized in their home cities or, as camps became available, in the camps adjacent thereto. The officers of these organizations who were not already members of the Medical Reserve Corps were commissioned therein and all were called to active duty. The nurses were enrolled in the Army Nurse Corps and the male attendants were enlisted in the Regular Army. Certain officers and noncommissioned officers of the regular establishment were assigned to these units in executive capacities and superintended the organization and instruction. Several of the hospitals became promptly available for early transportation overseas and thus relieved the Medical Department for the time being of the necessity for the further organization of base hospitals.

SANITARY TRAINS AND SANITARY DETACHMENTS FOR COMBATANT ORGANIZATIONS.

The Tables of Organization pertaining to the Sanitary formation of a division is as follows:[14]

PERSONNEL, MEDICAL CORPS.

Organizations.	Lieutenant colonel.	Major.	Captain.	Hospital sergeant.	Sergeant, first class.	Sergeant.	Corporal.	Private, first class or privates.	Wagoner.	Cook.	Farrier.	Horseshoer.	Mechanic.	Saddler.
Division Surgeon's Office	1	2	....	1	2	2	2	4	....	....	....	....	....	....
Regiment (Infantry)	....	1	6	....	1	4	....	43	....	....	....	....	....	....
Machine-gun battalion, 2 companies (Infantry)	....	....	1	....	1	1	....	4	....	....	....	....	....	....
Machine-gun battalion, 4 companies (Infantry)	....	....	1	....	1	1	....	12	....	....	....	....	....	....
Field Artillery, regiment; 2 battalions, motorized	....	1	2	....	1	2	....	16	....	....	....	....	....	....
Field Artillery, regiment: 2 battalions, horse-drawn	....	1	2	....	1	2	....	20	....	....	....	....	....	....
Field Artillery, regiment, 3 battalions	....	1	3	....	1	3	....	29	....	....	....	....	....	....
Field Artillery, trench mortar battery	....	....	....	....	....	1	....	3	....	....	....	....	....	....
Regiment engineers	....	1	2	....	1	2	....	24	....	....	....	....	....	....
Field battalion, Signal Corps	....	....	1	....	1	1	....	12	....	....	....	....	....	....
Train headquarters and military police, Infantry division	....	....	1	....	1	1	....	4	....	....	....	....	....	....
Ammunition train, Infantry division	....	1	2	....	1	3	....	25	....	....	....	....	....	....
Supply train, Infantry division	....	....	1	....	1	1	....	8	....	....	....	....	....	..
Sanitary squads	....	....	1 S. C.	....	1	1	2	22	....	....	....	....	....	....
Headquarters, sanitary train	1	....	(a)	....	1	4	....	8	1	....	....	....	....	....
Headquarters ambulance company section	....	1	....	....	....	1	....	3	1	1	....	....	....	....
Ambulance company, animal-drawn	....	....	5	....	2	11	6	108	18	3	1	2	1	1
Ambulance company, motorized	....	....	5	....	2	11	6	83	16	3	....	....	1	....
Headquarter field hospital section	....	1	....	....	....	1	....	4	....	1	....	....	....	....
Field hospital, animal-drawn	....	1	5	....	3	6	3	56	8	2	1	1	1	1
Field hospital, motorized	....	1	5	....	3	6	3	55	13	2	....	....	1	....
Camp infirmary	....	....	....	....	....	1	....	......	1	....	....	....	....	....
Divisional medical supply unit	....	....	1 S. C.	....	1	1	....	6	....	....	....	....	....	....

[a] 1 captain and 2 first lieutenants of the S. C. and Q. M. C., respectively.

The 1st and 2d Divisions (Regular Army) were mobilized in the summer of 1917, the regiments attached thereto being selected from those which had been on duty on the Mexican border and which had their sanitary personnel already attached. The sanitary trains for these divisions were formed from the ambulance companies and field hospitals already organized at the outbreak of the war. The vacancies in the personnel of these organizations were completed by the selection of officers and enlisted men already in the service.

The next activity of the Overseas Division was directed to supplying the sanitary units for the 32 National Army and National Guard divisions, which were organized during the late summer and fall of 1917. The National Guard divisions were formed from the preexisting organizations of State troops.[15] Of these, each regiment had a sanitary unit already organized, which, while limited in numbers, had already received a certain amount of instruction and was readily capable of expansion. The vacancies in these units were filled, as far as possible, by enlistments in the National Guard and were finally completed by men reporting from the first-draft calls. In many of the States, field hospitals and ambulance companies were among the units of the National Guard already in existence, certain of which were assigned to each division and used as the foundation from which the sanitary train was evolved. Vacancies in the personnel were filled in the same manner as noted for the regimental units.

Instructions were issued to the commanding officers of the medical officers' training camps to prepare certain selected officers and enlisted men for duty with the sanitary units of divisions and such as were selected were given special instruction for this duty. To each of the National Army divisions organized in September, 1917, there was sent a skeleton organization.

As rapidly as supplies became available, the sanitary units were equipped and outfitted and their training proceeded under the direction of the division surgeon. All sanitary units and personnel pertaining to the division, being an integral part thereof, were directly under the jurisdiction of the division commander, and proceeded overseas with the division, the office of the Surgeon General being in nowise connected with such movements. Each division, on embarking for service in France, had a complete sanitary personnel which was capable of functioning in a satisfactory manner.

A similar policy was adopted with reference to providing the sanitary units and personnel for divisions later formed. The difficulties which attended the procurement of the enlisted personnel for other medical units was not encountered in the case of divisional sanitary organizations as the division commanders had authority to assign drafted men arriving at their camps to these units as well as to other organizations and it was not necessary to secure from the War Department the special assignment of soldiers to the Medical Department for this purpose.

There were organized at these camps also sanitary squads in the ratio of one to each division, the personnel of which was one officer of the Sanitary Corps and 26 enlisted men of the Medical Department.[16]

BASE AND EVACUATION HOSPITALS—PERSONNEL.

The personnel of these organizations comprised:[17]

Base hospital, 1,000 beds.—1 colonel, M. C.; 2 lieutenant colonels, M. C.; 2 majors, M. C.; 12 captains, M. C.; 2 captains, D. C.; 3 captains, S. C.; 1 captain, Q. M. C.; 12 first lieutenants, M. C.; 1 master hospital sergeant, M. C.; 1 hospital sergeant, M. C.; 8 sergeants, first class, M. C.; 15 sergeants, M. C.; 5 corporals, M. C.; 12 cooks, M. C.; 158 privates, M. C., 100 female nurses; 2 dietitions; 2 stenographers and typists.

Evacuation hospital.—1 lieutenant colonel, M. C.; 4 majors, M. C.; 12 captains, M. C.; 12 first lieutenants, M. C.; 1 captain or first lieutenant D. C.; 3 captains or first lieutenants, S. C.; 1 captain or first lieutenant, Q. M. C.; 1 master hospital sergeant, M. C.; 2 hospital sergeants, M. C.; 10 sergeants, first class, M. C.; 20 sergeants, M. C.; 5 corporals, M. C.; 14 cooks, M. C.; 185 privates.

The most important of the units which this division organized for overseas service, and those which required the greatest amount of time and detail, were the base and evacuation hospitals. On such organizations it became incumbent to supply practically all of the permanent hospitalization facilities for the American Expeditionary Forces. The absolute necessity of a sufficient number of these hospitals with a thoroughly efficient staff became early apparent. Every effort was made by the Overseas Division to facilitate the organization of such units and to provide well in advance for a sufficient number in order that a thorough course of training might be given before their transfer to ports of embarkation preparatory to service abroad. Owing to the changes in the priority schedule and the difficulty in securing the assignment of sufficient enlisted personnel to this department, many obstacles were encountered in the attempt to carry out the program adopted. At times it became necessary to hurry the assemblage of authorized personnel, to designate the unit as a base or evacuation hospital, and to report it as ready for shipment, when the state of training was in a lamentable degree of insufficiency.

The tentative program arranged by this division provided for the organization of a certain number of base and evacuation hospitals at the medical officers' training camps,[13] such hospitals to remain at these camps for a period of approximately six weeks for a course of instruction relating strictly to the military side of the unit. After this course it was purposed to send the hospital to one of the cantonments for further instruction,[18] with particular emphasis to be laid on the duties of a professional nature which would fall to the lot of the personnel. At these camps the hospital would be attached to the permanent base hospital, the various members of the unit being assigned to duties analogous to those they would perform when the hospital functioned independently. Such a training program was followed by some of the units first organized with thorough success, and such units were all prepared for the performance of the duties pertaining to them by the time they were ordered abroad.

The disarrangement of the priority schedule as at first directed played havoc with the program arranged by this division for the organization of new base and evacuation hospitals. When the hospitals already organized could not be transferred, by reason of lack of transportation, there necessarily followed a shortage of places available for the mobilization of new units. This was overcome in part by securing authority from the War Department to designate certain cantonments as places where additional hospital units could be organized.[19] There was a constant lack of available enlisted personnel, however, so that many of the units under organization actually had only a small part of such personnel or of the required number of officers. Shortly before the armistice was signed and when the American forces were engaged in their heaviest fighting, urgent demands for additional medical units were received from the commanding general, American Expeditionary Forces. In order to meet these demands, many of the existing units were ordered to be consolidated and, in this way, a number of completed base and evacuation hospitals were rendered immediately available for overseas service.[20]

Before the World War the bed capacity of a base or evacuation hospital was 500.[21] This was increased for both units to 1,000 beds. Their capacity was capable of further expansion, so that frequently these units in active service would care for several thousand patients. In the administrative organization of a base hospital, one medical officer, the three Sanitary Corps officers, and the officer of the Quartermaster Corps were assigned to purely executive duties, a colonel or lieutenant colonel of the Medical Corps being the commanding officer, the three Sanitary Corps officers acting as adjutant, registrar, and mess officer, and the Quartermaster Corps officer as quartermaster. The other medical officers and officers of the Dental Corps were designated to perform the strictly professional medical work of the unit. This service was subdivided as follows:[17]

- Surgical Service:
  - 1 chief.
  - 11 general surgeons.
  - 1 orthopedic surgeon.
  - 1 genitourinary surgeon.
  - 1 brain surgeon.
  - 1 otolaryngologist.
  - 1 ophthalmologist.
  - 1 oral surgeon.
  - 2 roentgenologists.
- Medical Service:
  - 1 chief.
  - 3 assistants in general medicine.
  - 1 neurologist.
- Laboratory Service:
  - 1 chief.
  - 2 assistants.
- Dental Service:
  - 2 dentists.

This assignment to duty furnished a well-balanced professional staff, especially for duty near the zone of active operations, where battle casualties would constitute the greater portion of patients. In case certain hospitals were designated more exclusively for the care of general medical cases, necessary changes in the personnel were made by the chief surgeon, American Expeditionary Forces. The formation of an evacuation hospital was similar to that for a base hospital, the commissioned personnel being one less by one dentist.

In addition to the base hospitals organized for general service, certain units were prepared with a view to assignment to duty for the treatment of special classes of patients. Among these were units for the care of orthopedic, venereal, neuropsychiatric patients, for cases of brain surgery, and for special fracture cases. The hospitals were given the regular serial number of base hospitals, but their personnel comprised only specialists in such diseases and injuries as they would be required to care for.

In the organization of these units the Surgeon General first secured authority for the formation of the number desired at a given time and the designation of the camp at which each unit was to be mobilized. The commanding officer of the camp was then directed to organize the unit, assigning the enlisted personnel thereto. Upon the arrival of enlisted men at their first camp, classification cards were made for each, showing the special qualification of every man in any line of work, such as mechanic, carpenter, clerk, and hospital attendant. These cards were filed according to the classification of the men. The committee on the classification of personnel of the War Department had arranged complete lists of organizations showing the number of men under each occupational classification who were best fitted for duty therein. In selecting men for these medical units, the commanding officer of the camp, as far as practicable, selected men best qualified according to these lists. In addition, at each of the medical officers' training camps, as previously noted, there had been established special schools for the training of men in the various duties which would be required in sanitary organizations. These schools included training for cooks and bakers; for X-ray assistants; in orthopedic work, including the manufacture of the various appliances required; and in the clerical work required in the Medical Department. Whenever possible, soldiers who had received instruction in these schools were assigned to the units being organized for the duties in which they had been specially instructed.

The divisions of the Surgeon General's Office in charge of the special branches of medicine and surgery furnished to the Overseas Division the names of the officers to be assigned to the unit for the special duties previously noted. Special orders were obtained from the War Department for these officers, who were then reported to the commanding officer of the organization for duty. At times there was a shortage of officers available by the special divisions for such assignments, but on the whole very little delay was encountered. Special attention was paid by this division to the selection of the commanding officer of the unit, only such officers being selected as had records showing special administrative efficiency and ability to command. In the designation of the mess officer every effort was made to secure a man experienced in the methods of procuring, preparing, and serving food, either a former noncommissioned officer who had previously served as a mess sergeant or an officer from civil life who had been manager or steward of a restaurant, club, or hotel. Many excellent officers were obtained for these places and the mess management of these units in general was excellent. The professional qualifications of the medical officers assigned to duty in the various specialties were usually of a high order, such officers having been assigned to their respective specialties after a thorough investigation as to their capabilities. In addition, many of these officers had recently completed a course of instruction in one of the special schools which had been established at Camp Greenleaf and which were equipped in every way to give advanced teaching. The proper quota of nurses was assigned to each base or evacuation hospital organized by the Army Nurse Corps Section of the Surgeon General's Office. Two female stenographers were assigned to each hospital unit by the Overseas Division.

When the hospital unit was completely organized and equipped, it was retained in the camp where organized, or was attached to the base hospital at one of the cantonments until a satisfactory degree of training had been attained, if the movement of troops overseas permitted this delay. If the services of a unit were immediately desired overseas and transportation was available, the hospital, as soon as organized, was reported to the Chief of Embarkation Service of the General Staff as available, and orders directing the movement to a port of embarkation were issued. Upon the receipt of such orders the unit passed from under the immediate jurisdiction of the Surgeon General. In some instances, where haste was essential, the entire personnel of officers did not join the unit at the place of mobilization but were ordered directly to the port of embarkation to await its arrival and join it at that point. In a few cases, officers were sent abroad for special study before the hospital was ready to sail, and so reported for duty after its arrival overseas.

When a base or evacuation hospital was organized, the Finance and Supply Division of this office was notified of the fact, together with the approximate date of sailing; that division then arranged for the medical supplies of the unit to be shipped at the same time in order that the entire equipment of the hospital would be available upon its arrival in France. Certain difficulties were encountered in following this program and some of the hospitals arrived abroad without their complete equipment, but were properly outfitted by the medical supply detachment of the American Expeditionary Forces.

In all, 162 base hospitals and 59 evacuation hospitals were organized in this country.[22] Of these, 121 base hospitals and 40 evacuation hospitals were actually transported for duty overseas.[23] The remainder, which were in various stages of preparedness at the date of the signing of the armistice, were demobilized as rapidly as possible.

OTHER MEDICAL DEPARTMENT UNITS—PERSONNEL.

Convalescent camps.—1 major, M. C.; 4 captains, M. C.; 4 first lieutenants; 5 sergeants first class, M. C.; 14 sergeants, M. C.; 5 corporals, M. C.; 16 cooks, M. C.; 50 privates, M. C.; 1 first lieutenant, Q. M. C.

Convalescent depots.—1 major; 4 captains; 4 first lieutenants; 1 sergeant first class; 4 sergeants; 20 privates; 1 captain, Q. M. C.

The duties of the convalescent camps and convalescent depots [24] were implied in their names. They were usually attached to base hospitals, forming departments for the care of convalescent patients. Convalescent depots were also used with the armies in establishing the stations for slightly wounded.

These units were organized at the medical officers' training camps, the greater number at Camp Greenleaf, and after their organization was completed they were reported to the Chief of Embarkation Service, General Staff, for transportation overseas. The general principles observed in organizing these units followed those outlined for the formation of base hospitals. In all, 14 convalescent camps and one convalescent depot were sent overseas.

Evacuation ambulance company.—1 first lieutenant, 1 sergeant first class, 2 sergeants, 2 cooks, 3 mechanics, 23 wagoners, 6 privates.

These units were organized at medical officers' training camps, chiefly at Fort Riley. They were transferred directly from these camps to the ports of embarkation for shipment abroad. One hundred and one evacuation ambulance companies were organized in this country, 81 of which were transported for duty overseas.[26]

Army ambulance sections.—Before the United States entered the World War a number of volunteer ambulance companies had been organized in France, chiefly from the colleges of this country. After war was declared the War Department authorized the organization of the United States Ambulance Service,[27] to consist of 160 sections, of which 28 were formed from the sections which were already rendering volunteer service with the French Army. The remainder were organized at Camp Crane, Allentown, Pa., this camp having been established especially for this purpose. During the first few months of the war the organization of these sections was directly under the jurisdiction of the commanding officer of the United States Ambulance Service. After the departure of the headquarters of this service for France, the formation of these units was directed by the Overseas Division. As rapidly as units could be organized and transportation became available they were sent to France for service. During 1917 the enlisted personnel of these units was obtained through voluntary enlistments; after enlisting ceased certain numbers of drafted men were sent to Camp Crane for mobilization and assignment to the sections. One hundred and thirty-seven ambulance sections were organized and 120 were sent overseas. The Tables of Organization authorized the following strength, Medical Department, for each unit:[27] 1 sergeant first class, 2 sergeants, 1 corporal, 2 cooks, 2 mechanics, 26 privates first class, 11 privates.

Replacement units.—In view of the numerous casualties to be expected among the personnel of sanitary units attached to combatant troops during active operations, provision had to be made for supplying men to fill the vacancies which would exist among such formations. To accomplish this replacement, units were formed, consisting of 2 officers and 250 men each.[28] These units were organized at the various medical training camps and dispatched overseas as promptly as the men could be procured and transportation was available. During the continuance of the war, 56 such units were actually sent to the American Expeditionary Forces.[28] There was also a necessity for the transfer of additional officers abroad to replace those who for various reasons had become unavailable for further service. Parties of officers from the medical officers' training camps were constantly being ordered to France for this purpose. The number of officers who were thus transferred, unattached to medical units, is not available, but totals a large number.

Mobile hospitals and mobile surgical units.—The development of modern warfare had necessitated the adoption by the allied armies of new mobile sanitary formations by which facilities for rendering immediate surgical aid and chance of recovery to the seriously wounded could be brought directly to the injured men in place of having to carry the nontransportable wounded for indefinite distances to established hospitals. To meet such conditions, mobile hospitals, which previously had not been a part of our sanitary formation, were authorized.[29] Such units were adaptations of the auto-chirs (autonomes) of the French Army.

A mobile hospital consisted of fixed sterilizing, X-ray, and electric-lighting plants mounted on two motor trucks. In addition and carried on motor trucks were a light frame operating room, tentage, and sufficient hospital and surgical supplies to fully equip a surgical hospital of 120 beds with modern surgical facilities for the work of six operating teams. Such hospitals could function independently when conditions required or could be attached to other advanced sanitary formations to furnish additional surgical assistance. The personnel of such a unit was:

Mobile hospital.[29]—1 major; 10 captains or first lieutenants; 1 sergeant first class; 17 sergeants; 62 privates first class and privates; 22 female nurses; 1 captain or first lieutenant, S. C.

The mobile surgical unit was another medical formation which was the outcome of the experience gained during the recent war. Frequently, after an extensive battle, the surgical equipment of the sanitary formation in the zone of the army was insufficient to provide operating facilities for the large number of wounded requiring immediate surgical attention. This unit was adopted from the French *groupe complémentaire,* and consisted of portable sterilizing, X-ray, and electric-lighting plant, a light frame operating room and surgical supplies mounted on two motor trucks, or a truck and a trailer. The unit did not provide hospitalization facilities and therefore could not function independently. It supplemented the equipment of the advanced field hospitals and was available for use wherever its services might be most needed. The personnel of this unit was:

Mobile surgical unit.[29]—1 captain or first lieutenant, 1 sergeant first class, 3 sergeants, 8 privates first class and privates.

It was not the purpose of this unit to furnish an adequate personnel of officers, the necessary surgical staff being supplied from the permanent personnel of the field hospital with which the unit was serving or by the use of special surgical teams detailed to this duty.

Of these organizations six mobile hospitals and seven mobile surgical units were organized, and six mobile hospitals and four mobile surgical units were sent overseas.[29]

MEDICAL SUPPLY DEPOTS, STATIONARY LABORATORIES, AND MOBILE LABORATORIES.

These units, which were not provided for as sanitary formations prior to the World War, functioned for such duties as are indicated by their titles. The authorized personnel for each was: [24]

Medical supply depot.—Personnel of the Sanitary Corps: 3 captains or first lieutenants, 1 hospital sergeant, 2 sergeants first class, 4 sergeants, 4 corporals, 2 cooks, 10 privates first class, 22 privates; mixed unit, either M. D. or S. C. enlisted personnel.

Stationary laboratory.—Personnel of the Medical Department: 1 major, 5 captains or first lieutenants, 1 sergeant first class, 3 sergeants, 8 privates, first class and privates.

Mobile laboratory.—Personnel of the Medical Department: 1 captain or first lieutenant; 1 sergeant; 3 privates first class and privates; 1 first lieutenant, S. C.

Of these units the following were sent overseas for service: 9 medical supply depots, 5 stationary laboratories, 5 mobile laboratories.

Hospital units.—Prior to the onset of the World War the American Red Cross Society had organized a number of hospital units in various cities throughout the country,[3] the personnel of each consisting of 7 officers and 47 enlisted men. These units were mobilized during the early period of the war and 18 of them were sent to France, where they were attached to other sanitary organizations, generally to base hospitals. They did not operate independently.

Special units.—The following is a list of special units organized by this division for service with the American Expeditionary Forces: [18] Mobile Operating Unit No. 1; Medical Department Replacement Unit No. 1; Aviation Medical Unit No. 1; Aviation Ophthalmo-Otological Unit No. 1; Museum Unit No. 1; Roentgenological Unit No. 1; Ophthalmological Unit No. 1; Medical Classifying Unit No. 1; Medical Department Repair Shop Unit No. 1; Central Optical Unit No. 1; Neurosurgical Unit No. 1; Medical Research Board No. 1; Anesthetic Unit No. 1; Otolaryngological Unit No. 1; Neurosychiatric Units Nos. 1 and 2; Surgical Groups Nos. 1, 2, 3, 4, 5, 6, 7, 8, and 10; Rodentological Unit No. 1.

These units were organized at the request of the chief surgeon, American Expeditionary Forces, for special duties which could not be performed by the regular sanitary formations. The functions performed by these units are indicated by their names. The personnel was generally few in number and was designated by the professional divisions of this office to which their work pertained. These units were mobilized at different camps, and as promptly as they could be assembled and their equipment provided, were sent overseas.

Veterinary units.—In addition to the medical units noted, the following veterinary units were organized for duty overseas:[18] Base veterinary hospitals, S. O. S. veterinary hospitals, corps mobile veterinary hospitals, Army mobile veterinary hospitals.

All these hospitals were organized and their training directed by the Veterinary Division of the Office of the Surgeon General, and when considered ready for overseas duty, were reported to this division, which arranged for their transfer. The subject of the formation of these units is fully treated in the section devoted to the Veterinary Division.

HOSPITAL SHIPS.

No hospital ships were authorized for the Medical Department of the Army during the World War, the care of the sick and wounded who were returned from France being under the jurisdiction of the Bureau of Medicine and Surgery of the Navy.[30] They were returned mainly on transports under jurisdiction of the Navy, which also carried returning troops. The plan of having the Navy in charge of Army patients while on shipboard was not departed from save that after the armistice, when the movement of sick and wounded from overseas was very heavy, Army medical officers on certain occasions accompanied them, their work in cooperation with the naval medical officer in charge being devoted to patients not requiring hospital treatment, the ship's hospital with the more serious cases being solely under Navy Department jurisdiction. The Navy also carried a limited number of Army patients on Navy hospital ships with a Navy medical staff.

Under date of March 28, 1918, a joint agreement between the Secretary of War and the Secretary of the Navy provided for the return of patients, as follows:

Copy for: The Surgeon General.

The following articles set forth an agreement entered into by the Secretaries of War and Navy, which shall govern the Army and Navy in the transportation of the sick and wounded between the United States and France or England and the disposal of the remains of officers, enlisted men, and civilian employees of the Army, Navy, and Marine Corps who die between the United States and France or England, or in France.

Article I. *Sick and wounded.*

(*a*) Sick and wounded being brought from France or England to the United States will be brought in Navy hospital ships or transports, whichever may be most suitable and available, except in special cases where transportation by commercial liners may be authorized.

(*b*) The Army will be in charge of the embarkation and debarkation of all Army patients.

(*c*) The Navy will be charged with the care of these patients while on board ships of the Navy acting as transports or otherwise. At the request of the Navy, the Army will render such assistance in personnel and material as may be necessary.

(*d*) No patients will be returned to the United States if, in the opinion of the Surgeons concerned, they will probably recover within six months.

Article II. *Disposition of remains of those who die in France.*

(*a*) The remains of all officers, enlisted men, and civilian employees of the Army, Navy, and Marine Corps who have died or who may hereafter die in France shall be buried in France until the end of the war, when the remains shall be brought back to the United States for final interment.

(*b*) Such cemeterial facilities as the Army may have acquired in France shall be available to the Navy.

Article III. *Disposition of remains of those who die at sea.*

(*a*) The remains of all officers, enlisted men, and civilian employees of the Army, Navy, or Marine Corps who die on board a ship en route to or from the United States shall be embalmed and returned to the United States on board the ship on which the death occurred.

(*b*) All ships engaged in transporting troops shall be equipped with the necessary personnel and material to carry the foregoing requirements into effect.

Article IV. *Enforcement.*

The War and Navy Departments will at once take the necessary steps to put the foregoing into effect.

War Department, March 28, 1918.
Benedict Crowell,
Acting Secretary of War.

Navy Department, March 28, 1918.
Josephus Daniels,
Secretary of Navy.

Initialed by General Jervy, W. V. P. Captain Pratt.

An amendment of this agreement was effected on June 30, 1918, as follows:

War Department,
Washington, June 30, 1918.

The following articles set forth a change in an agreement entered into by the Secretaries of War and Navy which will govern the Army and Navy in the transportation of the sick and wounded between the United States and France or England and the disposal of the remains of officers, enlisted men, and civilian employees of the Army, Navy, and Marine Corps, who die between the United States and France or England, or in France.

Article I.

Paragraph (*d*) Article I. Agreement entered into by the Secretaries of the War and Navy Departments, March 28, 1918, in reference to transportation of the sick and wounded between the United States and France and England and the disposal of the remains of officers, enlisted men, and civilians in the employ of the Army, Navy, and Marine Corps, who die between the United States and France or England, or in France, is hereby revoked and the following substituted therefor.

Paragraph (*d*). The commanding general of American Expeditionary Forces will decide what class of patients and the numbers of each he desires returned to the United States. He will ascertain the actual number of each class that can be accommodated on each vessel from the senior naval surgeon through the commanding officer of that vessel and will not exceed that number.

ARTICLE II. *Enforcement.*

The War and Navy Departments will at once take the necessary steps to put the foregoing into effect.

War Department, June 30, 1918.
(Signed) NEWTON D. BAKER,
Secretary of War.

Navy Department, July 2, 1918.
(Signed) JOSEPHUS DANIELS,
Secretary of Navy.

The policy which the Surgeon General of the Army desired to be adopted with reference to this subject is set forth in the following correspondence:

NOVEMBER 14, 1917.

From: The Surgeon General of the Army.
To: The Secretary of War.
Subject: Transportation of sick and wounded of the American Expeditionary Forces.

1. Attention is invited to the following in reference to the transportation of sick and wounded from France to the United States:

It is proposed to bring back to the United States the following classes:

First. Cases of insanity and tuberculosis.

Second: Wounded officers and enlisted men who are permanently disabled and who have reached a stage where they would not require active surgical treatment while at sea.

Third: Officers and enlisted men permanently disabled from disease.

Fourth: Officers and enlisted men not necessarily permanently disabled from disease or injury but who will probably be under treatment for long periods.

2. In regard to the means of transportation, two methods are possible: (1) By utilizing the return trips of transports carrying troops and supplies, and (2) by means of regular hospital ships. The larger transports carrying troops could probably be arranged to carry sick and wounded, though not with the comfort and safety which would be afforded by hospital ships with special facilities and personnel.

3. In addition to the matter of comfort and efficient care, the question of safety and protection of sick and wounded becomes a great factor. Transports carrying large numbers of returning invalids, many of them helpless, and with Army nurses aboard will undoubtedly be liable to destruction by submarines, and the probable loss of ships carrying crippled men must be considered; nor could this attack by the enemy be held improper.

4. If hospital ships in sufficient numbers to undertake this duty be supplied, it is believed that the sick and wounded may be transported in much greater comfort, and it seems unquestionable that by proper arrangements their safety from submarines may reasonably be assured. In spite of reports to the contrary, it is believed that a hospital ship, traveling openly and marked by day and night, and not suspected of carrying any contraband articles, will not be intentionally sunk. A statement has been made that the policy of putting an officer of a neutral country aboard hospital ships has been considered by foreign countries, but it is not known whether this plan has been carried out. It is known that the New Zealand hospital ships have been in continuous operation without hindrance from the enemy.

The transportation of sanitary organizations and medical supplies on hospital ships, it is thought, would not be considered improper, and this method would relieve the transportation service.

5. The suggestion is made that the matter of protection be taken up by the State Department. Sick and wounded are entitled to every comfort, care, and protection, and it would seem that the use of hospital ships should not be abandoned unless the enemy should refuse to guarantee this protection or should show some specific hostile intention.

6. It is therefore recommended that this matter be given consideration and that the question of allotting a certain number of ships for use as hospital ships be considered, so that they may be properly prepared, or, in the event of a decision to the contrary, that the details of regulations for carrying sick and wounded on transports may be completed.

(Signed) W. C. GORGAS,
Surgeon General, U. S. Army.

704.1 E. E.

[1st ind.]

War Department, A. G. O., December 1, 1917 (through the Chief of Embarkation Service to the Surgeon General).

1. Attention is invited to memorandum from Chief of Embarkation Service, dated November 24, 1917, inclosed herewith. The Secretary of War directs the use of the transports *Saratoga* and *Havana*, which are to be fitted up as hospital ships, be for the present for the transportation of sick and wounded who are not able to be transported on regular transports returning from abroad.

2. Officers and enlisted men, convalescent, or those who are run down, and it is desired to return home, should be accommodated on regular transports returning from France.

3. If it should later develop that the accommodations on the *Saratoga* and *Havana* are not sufficient for transporting the sick and wounded who should be transported thereon, the question should again be brought to the attention of this office.

4. Copy of letter from the Secretary of War to the Secretary of State, requesting that information regarding the policy of the German Government relating to the sinking of hospital ships be obtained, is attached hereto.

By order of the Secretary of War:

(Signed) J. B. Wilson,
Adjutant General.

2 incls.

November 24, 1917.

Memorandum for: Chief of Staff.
Subject: Transportation of sick and wounded of the American Expeditionary Forces.

1. As a general proposition, there is only one sure way of transporting the sick and injured with safety from abroad, and that is by regular hospital ships, plainly marked and generally known as such vessels. No matter to what extent our transports might be camouflaged or especially marked to indicate having aboard sick and injured, they would be subject, undoubtedly, to attack by submarines.

2. The Navy Department at present time is equipping as hospital ships the former transports *Saratoga* and *Havana*. It is believed that these two vessels will be sufficient for the transportation of sick and wounded who are not able to be transported on regular transports returning from abroad.

3. The use of these vessels for that purpose is contemplated by the Navy and agreeable to them.

4. Officers and enlisted men, convalescent, or those who are run down, and it is desired to return home, should be accommodated, in the opinion of this office, on regular transports returning from France.

5. Action is therefore recommended in accordance with the foregoing.

(Signed) Chauncey D. Baker,
Brigadier General, National Army, Chief of Embarkation Service.

[2d ind.]

Office of the Chief of Embarkation Service, Washington, D. C., December 8, 1917. To the Surgeon General of the Army.

(Signed) W. C. K.

[3d ind.]

S. G. O. 571.1 Hosp. Ships.

War Dept., S. G. O., December 7, 1917. To Bureau of Medicine and Surgery of the Navy.

1. (*a*) It is deemed necessary to have an exact understanding as to what extent the hospital ships of the Navy will be available for transportation of the permanently disabled of the American Expeditionary Forces of the United States.

(*b*) According to paragraph 3 of the inclosed memorandum from the Chief of Embarkation Service to the Chief of Staff it is contemplated that those permanently disabled can be returned by the Navy on their hospital ships. It is estimated in this office that with a force of 1,000,000 abroad there will be approximately 5,833 permanently disabled to be returned to the United States every month. Of this number probably 20 per cent will be strictly hospital cases requiring surgical or medical treatment on the return voyage.

2. The type of cases mentioned in paragraph 4 of the inclosed memorandum, above referred to, are not included in this estimate.

3. It is further understood in this office that the former transport *Saratoga* will not be ready for use as a hospital ship for a number of months. An opinion is requested from you as to whether the Navy, with the hospital ships not available or contemplated, will be able to provide transportation and care for the number of sick and injured who will have to be returned to the United States.

For the Surgeon General:

(Signed) H. P. BIRMINGHAM,
Brigadier General, Medical Corps, Acting Surgeon General.

[Answer to 3d ind.]

WASHINGTON, D. C., *December 13, 1917.*

To: Surgeon General of the Army.

Subject: Transportation of sick and wounded of the Army Expeditionary Forces; use of hospital ships of the Navy therefor.

References: (*a*) Letter of November 14, 1917, A. G. O. No. 704.1, S. G. O. No. 571.1 (hospital ships) of Surgeon General, U. S. Army, to Secretary of War.
(*b*) 1st indorsement thereon of Adjutant General's Office, December 1, 1917, No. 704.1.
(*c*) Memorandum for Chief of Staff of November 24, 1917, from Chief of Embarkation Service.
(*d*) 3d indorsement by Surgeon General's Office No. 571.1 (hospital ships) of December 7, 1917, to Bureau of Medicine and Surgery.

Inclosure: Correspondence forwarded to this office in connection with the above references.

1. Correspondence with regard to the use of hospital ships of the Navy for the transportation of the American Expeditionary Forces to the United States is returned herewith.

2. Referring to the first indorsement of Adjutant General's Office of December 1, 1917, and to paragraphs two and three of memorandum for Chief of Staff, November 24, 1917, attention is invited to the fact that the *Havana* and *Saratoga* (*Mercy*) were allotted to the Navy for conversion to hospital ships and are now under the cognizance of the Secretary of the Navy. Their accommodations will be required entirely for the care and treatment of the sick and wounded of the naval forces afloat. These ships will operate in conjunction with the fleet and will not be available for Army uses, and, further, their accommodations are not considered adequate to meet the demands expected from the naval forces either at home or abroad. It is further considered impracticable for these two vessels to provide under any circumstances transportation for wounded of any forces approximating 5,833 per month as estimated in paragraph 1 (*b*) of the third indorsement of the Surgeon General's Office.

3. With reference to paragraph 1 (*a*) and paragraph 3 of the third indorsement of the Surgeon General's Office, you are advised that your office should place no reliance or expectations for service upon these hospital ships, as it must be realized that they will at no time be available for the care or transportation of sick and wounded of the Army, except for an occasional case under special circumstances.

4. The Medical Department of the Navy is making no provision in the way of hospital ships for the accommodation or care of the sick and wounded from the Army, as this is considered a matter entirely within the province of the proper Army authority. It is practicable to receive patients aboard troop transports only to the limit of accommodation as obtained from the commander cruiser force and forwarded to your office December 3, 1917.

(Signed) W. C. BRAISTED.

[4th ind.]

War Dept., S. G. O., December 18, 1917. To the Chief of Staff.

1. In compliance with paragraph 3, first indorsement, Adjutant General's Office, this letter is returned for your consideration.

2. Attention is invited to those letters from the Bureau of Medicine and Surgery, Navy Department, which is a reply to request from this office for information as to the availability of Navy hospital ships, referred to in paragraph 2 of memorandum from Chief of Embarkation Service, for transportation of Army patients to the United States. It will be seen that the Navy Department has no expectation of providing for Army patients on their hospital ships, which are needed for their own purposes.

3. In this connection attention is invited to the correspondence which has been carried on between this office and the Bureau of Medicine and Surgery, Navy Department, regarding the use of transports under Navy control for returning the disabled of the American Expeditionary Forces to the United States.

According to the estimates of the Navy Department, the number of beds available for hospital cases, deducting the number necessary for use of the Navy and the ship's personnel, would be insufficient for the transportation of Army hospital cases.

It is also thought necessary to again emphasize the necessity of providing comfort and safety for disabled soldiers on their return home.

4. If sanitary personnel and supplies may be carried on hospital ships, this will greatly relieve the overseas tonnage.

5. It has been suggested that the ships *Tenadores*, *Pastores*, and *Calamaris*, each of 7,000 tons, gross, now controlled by the Quartermaster's Department as transports, would be suitable for conversion into hospital ships. While these ships have not been actually surveyed, with a view of such conversion, it is probable they would make ships of five or six hundred bed capacity.

....,
Surgeon General, U. S. Army.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
Washington, December 21, 1917.

Memorandum for the Chief of the Embarkation Service.
Subject: Transportation of sick and wounded of the American Expeditionary Forces.

The papers herewith on the above matter are again returned to you for further consideration and report in view of the statement of the Bureau of Medicine and Surgery of the Navy that the transports *Saratoga* and *Havana* will not be available for Army use, nor that the Navy Department has any expectation of providing for any patients on their hospital ships, which are needed for their own purposes.

(Signed) T. E. W. SLADEN,
Colonel, General Staff, Secretary.

[5th ind.]

Office of the Chief of Embarkation Service, December 26, 1917. To the Bureau of Operations, Navy.

For further remark and recommendation.

When this matter was previously taken up with the Bureau of Operations, Navy, it was understood by this office that the use of the Navy hospital ships *Saratoga* and *Havana* as outlined in memorandum by this office to the Chief of Staff under date of November 24, 1917, was agreeable to the Navy.

(Signed) CHAUNCEY B. BAKER,
Brigadier-General, National Army, Chief of Embarkation Service.

[6th ind.]

14351–1:1 NAVY DEPARTMENT, *December 29, 1917*.

From: Chief of Naval Operations.
To: Chief of Embarkation Service, U. S. Army.
Subject: Transportation of sick and wounded of American Expeditionary Forces.

1. About the 5th of November, 1917, the question arose with the British Admiralty of an exchange of the *Havana* and *Saratoga* for two of their hospital ships which they proposed to turn into cargo carriers, the idea being that if alterations had not progressed too far it would save time and work for efficiency to effect the exchange.

2. The matter was taken up with the Secretary of the Navy and the reply to that inquiry outlined the policy of the Navy Department as regards the use of its hospital ships.

"The alterations to our hospital ships are so far advanced that no advantage would be gained by the suggested transfer. Some time ago the Army took up the matter of converting several cargo bottoms into hospital ships, this office discouraging the idea, and offered the use of its two hospital ships in mutual work for both services. The Army accepted this policy and the present intention is that no more cargo ships should be diverted from more urgent supply work."

This action was taken as the Navy Department deemed it extremely unwise, in view of the existing shortage of commercial bottoms, to withdraw any more ships for special purposes, especially as there was an increasing number of troop transports of great size, considerable speed, and comfortable quarters which might be made available, on their return voyages, for certain classes of the wounded and for those invalided home.

3. The above is still the Navy Department's policy and it expects to use its hospital ship jointly for the service of all our forces at the front.

(Signed) W. S. BENSON.

[7th ind.]

Office of the Chief of Embarkation Service, January 2, 1918. To the Chief of Staff.

Attention is invited to the preceding sixth indorsement from the Chief of Naval Operations.

It will be noted that it is still the policy of the Navy to utilize the hospital ships referred to in memorandum from this office of November 24, 1917, for the joint use of the Army and Navy in bringing home the sick and injured who are unable to travel on returning regular Army and naval transports.

This office concurs in the view of the Bureau of Operations, Navy, that, due to the existing shortage of commercial bottoms, it is inadvisable to withdraw more ships for special purposes. It is believed that it will be practicable to transport on the naval hospital ships *Saratoga* and *Havana* sick and wounded who are able to travel at all, and that suitable accommodations for certain classes of wounded and those convalescing can be given on returning Army and naval transports.

(Signed) CHAUNCEY B. BAKER,
Brigadier-General, National Army, Chief of Embarkation Service.

[8th ind.]

WAR DEPARTMENT,
Washington, January 7, 1918.

From: The Secretary of War.
To: The Secretary of the Navy.
Subject: Transportation of sick and wounded of American Expeditionary Forces.

Reference paragraph 3 of Admiral Benson's letter dated December 29, 1917, on above subject, I request that you please direct the Surgeon General of the Navy to confer with the Surgeon General of the Army to make the necessary arrangements to put the matter of the joint use of Navy hospital ships into effect.

Directions have been given to the Surgeon General of the Army in the matter.

(Signed) NEWTON D. BAKER.

[9th ind.]

14351-4.1. JANUARY 15, 1918.
Op. 28.
From: Secretary of the Navy.
To: The Surgeon General, Bureau of Medicine and Surgery.
Subject: Transportation of sick and wounded of American Expeditionary Forces.

1. Please confer with the Surgeon General of the Army, as requested by the Secretary of War in the above letter, to make the necessary arrangements to put the matter of the joint use of naval hospital ships into effect.

2. Return papers.

(Signed) JOSEPHUS DANIELS.

14351-4.1. NAVY DEPARTMENT,
Washington, January 29, 1918.

To: Chief of Bureau of Medicine and Surgery.
Subject: Transportation of sick and wounded of American Expeditionary Forces from Europe to United States.
Inclosure: One.

1. Forwarded herewith for your information is a memorandum from the Chief of Staff United States Army, to the Chief of Naval Operations.

2. In accordance with the last paragraph of this memorandum, you will confer with the Surgeon General of the Army with a view to making such recommendations as you believe necessary in order that all questions involved in this memorandum and in previous correspondence on the same subject may be definitely settled.

3. Attention is particularly invited to the previous correspondence and to the department's eleventh indorsement of January 22, 1918, a copy of which was furnished you, which outlines clearly the policy which the department approves and upon which action must be based.

(Signed) JOSEPHUS DANIELS.

[2d ind.] 129680
FEBRUARY 7, 1918.

To: Secretary of the Navy.
Subject: Transportation of sick and wounded of American Expeditionary Forces from Europe to United States.

1. As directed in 14351-4:1, Op-22-B, January 29, 1918, a conference was held with the Surgeon General of the Army, and the following recommendations are submitted:

(*a*) That the hospital ships *Havana* and *Mercy* should be considered as entirely unavailable for Army purposes as "sick transports." Their total capacity is relatively very small, and it is believed that they will be completely occupied with their function of accompanying mobile units of the fleet as medical supply ships and for the care of the sick and wounded of the Navy.

(*b*) That Navy transports now in service at present, it is believed, will suffice for bringing back large numbers of certain types of cases requiring nominal medical care and nursing; in short, cases not confined to bed. A limited number of bed cases, under proper conditions for their care and comfort, can be returned in the sick bays of these ships. However, the number of such cases will be limited by the number of beds available after the Navy sick and the sick of troops in transit are taken care of. It has been a fact on every Navy transport making the eastward trip to date that the sick from the troops in transit overflowed the sick-bay accommodations. These Navy transports, however, are already engaged in bringing back to the United States Army cases of various types. The Army Medical Department delivers these patients to the medical officer on the transport at the port in Europe. Upon arrival at a port in the United States the surgeon of the port (Army) takes charge of transportation of patients from the transport and their subsequent care.

(*c*) That to take care of the more serious cases (bed cases), contingent on casualties, which may be expected to reach thousands in number, and the urgent need which will develop to relieve the hospitals in France in order that they may be ready for further casualties following another extensive engagement, it is considered absolutely necessary that there be furnished a number of hospital ships or "sick transports." It is considered as a conservative estimate that six ships will be required of sufficient speed and tonnage to insure a bed capacity of 500 or more and one round trip every month.

(*d*) Under the above conditions we recommend that the medical provisions needed in the transport of troops and the transportation of sick and wounded of the Army be intrusted to the Navy.

(Signed) W. C. BRAISTED,
Surgeon General, U. S. Navy.
(Signed) W. C. GORGAS,
Surgeon General, U. S. Army.

[10th ind.] 129680

JANUARY 21, 1918.

To: Secretary of the Navy.
Subject: Transportation of sick and wounded of American Expeditionary Forces.

1. As directed in the ninth indorsement, a conference was held with the Surgeon General of the Army.

2. The Surgeon General of the Army states that he was informed some time ago that the Army Medical Corps would not have the responsibility of transporting the sick and wounded of the Army from Europe, but that the Navy would undertake it. The Bureau of Medicine and Surgery has received no intimation whatever that this, which is considered the gravest problem of the Army Medical Department, would come within the jurisdiction of the Navy Medical Department.

3. The Surgeon General of the Army estimates that transportation will be required for 5,833 permanently disabled men every month, of which about 1,200 will be strictly hospital cases. Convalescents are not included in these figures. It is believed that war conditions may require evacuation of cases other than those permanently disabled to relieve at times, temporarily, the base hospitals abroad, and that therefore the above figures are not an overestimate, particularly with regard to actual hospital cases.

4. Two hospital ships have been purchased under a special Navy appropriation and are now nearly ready for service. Hospital ship No. 1, now building at Philadelphia, can not be counted upon for a long time to come. The *Solace*, now in service, if not in need of repairs, will, with the two ships mentioned above, constitute the total resources of the United States in hospital ships, to serve, if used jointly as indicated in the sixth indorsement of the Chief of Naval Operations, an estimated Navy and Marine Corps personnel afloat and ashore abroad of 300,000 men and an Army personnel abroad of 1,000,000 men.

5. (*a*) The bed capacity of these three hospital ships, if diverted entirely for Army needs, estimating that they could maintain an average schedule of three round trips every two months, which is doubtful, would prove totally inadequate to the Army needs as anticipated by the Surgeon General of the Army in this correspondence.

(*b*) The Bureau of Medicine and Surgery, until the receipt January 15, 1918, of the sixth indorsement from the Chief of Naval Operations, was uninformed regarding the offer, as far back as November, 1917, of hospital ships to the Army in mutual work for both services. No provision has therefore been made to meet such a contingency, involving, as it would, the lack of hospital accommodations at the isolated bases, both at home and abroad, at which the units of the fleet assemble or will most likely assemble for strategic reasons (attention is invited to the assembly points for the fleet in home waters and to what may be expected regarding isolation from hospital bases gathered from intelligence data regarding, for instance, the British fleet). The necessity for the presence of hospital ships with the naval forces afloat to take care of the Navy personnel and to act as medical supply ships is considered vitally essential, and will become more so as the naval activities, both ashore and afloat, increase beyond seas. Attention is further invited to the fact that major naval activities will most likely be far removed from expeditionary activities on land and that mutual use of hospital ships would not work out efficiently, as most probably contemplated when the mutual offer was tendered by the Navy Department.

6. Upon the turning over of certain vessels to the Navy for use as transports, the Bureau of Medicine and Surgery recommended the usual sick-bay accommodations for the proper care of the Navy crews and the transient Army contingents. When certain factors pointed to the fact that the Army Medical Department might fail to obtain hospital ships, it was anticipated that certain types of cases capable of helping themselves, and not therefore in need of nursing care, would be returned on these ships. As it was considered that some of these men, more so than

healthy men, would become bed cases, the utmost limit was asked for in the way of beds in the sick bays of the ships, and as a result it is believed that the following conservative accommodations for Army sick and wounded exist on 19 of the Navy transports already in service at the low average of one trip a month for each vessel. As certain additional ships are rapidly being converted into transports, these totals will be considerably increased:

Bed cases	1,000
Surgical cases able to walk	2,700
Insane	150
Tuberculosis cases	350
Requiring no special attention	5,500

7. Considering the naval needs as vital, it is strongly recommended that the three Navy hospital ships, *Mercy*, *Havana*, and *Solace*, be considered as not available for Army use, except for individual casual cases and in those instances when joint operations of the main fleet and Army take place.

8. (*a*) The use of transports in lieu of hospital ships as a means of transporting helpless sick and wounded involves the certain risk of enemy attack without consideration for the character of the personnel on board, and for this reason is most inadvisable, and the loss of life to be expected should, unfortunately, one of these vessels be sunk, will be attended with bitter criticism from the families and friends of those lost.

(*b*) The bureau, in the event of a decision to use returning Navy transports for bringing back sick and wounded of the Army and Navy, not contingent on the ordinary casualties to be expected from the complement of the ship, desires definite instructions to this effect.

(*c*) As it is understood from the sixth and seventh indorsements that the suggestion of the Surgeon General of the Army can not be granted, that certain ships be converted into hospital ships for Army use, even though possibly by using them on the outgoing trip for transportation of Medical Department personnel and the large quantities of medical supplies required abroad, the net result would be no loss in tonnage for other purposes, it would appear that the only available accommodations at this time are the sick bay and ordinary berthing spaces on the transports.

(*d*) The designation of Navy transports, or Navy hospital ships for that matter, for transporting Army sick and wounded will place an unexpected responsibility upon the Medical Department of the Navy, a new departure, in fact, from what hitherto has been the custom both at home and abroad. Such a decision coming nearly a year after the breaking off of diplomatic relations and 10 months after the declaration of war, places upon the Navy, at a late date, the responsibility for possible lack of preparation in personnel, equipment, supplies, and proper hospital arrangements to meet the needs of additional thousands of men.

(*e*) The offer of the Bureau of Medicine and Surgery to furnish medical and surgical supplies to Army contingents in transit on Navy transports did not contemplate sick and wounded other than troops in transit, and it may be necessary for the Army Medical Department to meet deficiencies in Navy medical supplies should the Navy appropriation fail to be increased to meet the additional expenditure.

(*f*) It is considered that the facilities of the Medical Department of the Navy are sufficient to provide for the proper care of patients on Navy transports provided:

(*a*–1) That the Army Medical Department assume care of patients at the points of embarkation until delivery of cases is accomplished to the senior medical officer of the ship.

(*b*–2) That bed cases be received only to the capacity of the sick bay of each vessel, reserving sufficient beds for Navy cases and the crew, and that other types of cases be not in excess of the number determined upon by the force surgeon approved by the commander cruiser force.

(*c*–3) That the Army Medical Department be prepared to supply, if necessary, Medical Department personnel to aid in the care and organization of the possibly large contingent of walking cases.

(*d*–4) That the Army Medical Department assume immediate responsibility, including transportation from ship to Army hospital, of all Army cases transferred from the vessel at the port of disembarkation in the United States

(*e*–5) All sick or wounded cases, while in transit on the ship, to be under the general supervision of the senior naval medical officer.

9. Detailed definite instructions will be compiled upon receipt of decision from department as to whether or not hospital ships or transports will be used.

(Signed) W. C. Braisted.

[11th ind.]

JANUARY 22, 1918.

1435—4:1
From: Secretary of the Navy.
To: Secretary of War.
Subject: Transportation of sick and wounded of American Expeditionary Forces.

1. The foregoing correspondence indicates clearly and definitely the present and contemplated resources of the Navy Department for transporting sick and wounded from European ports to the United States, viz, the facilities offered in the 15 transports now in service (see reference (c) of second indorsement of the Surgeon General of the Navy hereon) and any additional transports that may be added, together with the two naval hospital ships, *Mercy* and *Havana*, when the services of the two last named can be spared from naval use. This correspondence also states the desire of the Navy Department to utilize the resources in this respect to the fullest extent for the transportation of the sick and wounded of the Army, having due regard for the handling of the sick and wounded of the naval forces.

2. It is not the Navy Department's intention to increase its facilities for this purpose beyond what has already been indicated.

3. In order that there may be no misunderstanding, the Navy Department wishes to emphasize the fact that it does not and can not assume responsibility for the transportation of the Army sick and wounded beyond what has already been stated and as reiterated in the preceding indorsements of the Surgeon General of the Navy.

4. Should the War Department, after consideration, decide that these facilities are not sufficient for the purposes desired, and desire to provide for vessels for this purpose, the Navy Department will be prepared to supply the personnel for manning such vessels and will gladly undertake their operation.

(Signed) JOSEPHUS DANIELS.

Data relative to the number and kind of patients which will be returned from American Expeditionary Forces and the ship accommodations that will be required.

1. The rate of discharge on surgeon's certificate of disability in 1917 was 15.98 per thousand.

2. That the rate will be at least 20 per thousand in the hurriedly agumented forces of war time is considered a most conservative estimate.

3. Based on the experience of our Allies we may expect 25 per cent battle casualties, and the commanding general, American Expeditionary Forces, has estimated that 20 per cent of these casuals will be returned to the United States for further treatment or discharge. Upon these figuers, we must expect that one-twelfth of 7 per cent of the total forces there will have to be transported home each month. Based also upon the experience of our Allies at least 50 per cent (including insane and tuberculars) of those which are sent will require sick-bay or special accommodations.

	Strength.	Number to be evacuated.	Number requiring sick bay or special accommodations.	Number which can receive this accommodation on Naval transports.	Excess or deficiency.
1918.					
May	570,000	3,323	1,662	2,341	+679
June	665,000	3,879	1,989	2,341	+352
July	755,000	4,404	2,202	2,341	+139
August	835,000	4,870	2,435	2,341	−94
September	910,000	5,308	2,654	2,341	−315
October	1,015,000	5,920	2,960	2,341	−619
November	1,115,000	6,504	3,252	2,341	−911
December	1,210,000	7,058	3,529	2,341	−1,188
1919.					
January	1,350,000	7,875	3,937	2,341	−1,396
February	1,485,000	8,579	4,289	2,341	−1,948
March	1,615,000	9,421	4,710	2,341	−2,396
April	1,735,000	10,121	5,060	2,341	−2,619
May	1,845,000	10,762	5,381	2,341	−3,040
June	1,955,000	11,404	5,702	2,341	−3,361
					−18,208

4. The above are based on estimates based on available data and it is believed represent an accurate picture of the problem which is before us. It may be true that the figures in the earlier months will prove to be excessive. The reverse for the later months will doubtless also prove true.

5. The residual capacity of the hospitalization overseas will be filled up during the earlier months, and comparatively only a few will be returned. When this residual capacity is filled, the full weight of the evacuation problem must be met.

6. When a man will manifestly never be able to return to the fighting line or render effective service in the rear, it would seem to be of prime military importance to evacuate him to this country as early as practicable.

7. The figures in paragraph 3 take into consideration only those requiring sick-bay or special accommodations, as there will be ample space on return transports to accommodate those not requiring special accommodations.

8. In addition to the matter of comfort and care, the question of safety and protection of sick and wounded becomes a great factor. Transports carrying large numbers of returning invalids, many of them helpless, and with Army nurses aboard, will undoubtedly be liable to destruction by submarines. The probable loss of ships carrying crippled men must be considered. Nor could this attack by the enemy be held improper. The conditions which would arise, should such a ship loaded with helpless wounded be sunk, can readily be imagined.

9. The transportation of sanitary organizations and medical supplies on hospital ships, it is thought, would not be considered improper, and this method would relieve the transportation service.

10. Under any conditions, the naval transports are not adapted to the care of sick and wounded in any great number.

(Signed) W. L. HART,
Lieutenant Colonel, Medical Corps.

518 Miscl. Div.
From: The Adjutant General of the Army.
To: The Surgeon General.
Subject: Transportation of sick from abroad.

1. The Secretary of War directs that you confer with the Surgeon General of the Navy with a view to carrying out the recommendations contained in the following telegram from the commanding general, American Expeditionary Forces, and upon completion that you submit to this office report of the results obtained in this conference:

Number 1024, paragraph 1, subparagraph D, with reference to Army-Navy articles of agreement of March 28, 1918, concerning transportation of sick and wounded to home territory, it is absolutely essential, in order to insure an efficient evacuation service and not embarrass Army hospitalization facilities at base ports here, that Army and Navy Departments, through their Surgeon Generals, agree on and communicate to their transport officials the principle that the number and kind of patients to be transported to the United States by the Navy will be a matter determined by me and governed only by the capacity of the ships and ability of the Army Medical Department to furnish such additional medical attendance en route as may be deemed necessary. We are prepared to furnish these attendants as required. It is understood that Navy have issued instructions that not more than five insane cases shall be received on any ship. As this restriction particularly hampers our evacuation problem, I request that it and any other in conflict with the policy above proposed be removed.

(Signed) H. G. LEARNARD,
Adjutant General.

[1st ind.]

S. G. O. 721.6, patients overeas.
War Dept., S. G. O., June 1, 1918. To the Adjutant General of the Army, Washington, D. C.

1. Returned.

2. A conference was had with the Chief of Bureau of Medicine and Surgery, Navy, and the entire matter of transportation of the Army sick and wounded returning from the American Expeditionary Forces gone into.

3. It was considered desirable that the matter be returned by separate indorsement rather than by a conjoined indorsement as pertained in previous conferences.

4. In time of peace, the discharge rate for the Army, due to disease and accident, has been 1.6. It is safe to assume that it will be at least 2 per cent, in the augmented forces, in time of war.

Authorities agree that we may expect 25 per cent battle casualties, and the commanding general, American Expeditionary Forces, estimates that 20 per cent of these casuals will be returned to the United States. Therefore, 7 per cent of the forces overseas must be expected to return to this country each year. Fifty per cent of those returning will need sick-bay or special accommodations en route.

5. The above figures are substantiated by the Canadian experiences.

6. The available accommodations on Navy transports will be inadequate to meet the needs, assuming that the entire fleet will make one round trip a month, and its maximum accommodations would be available for Army use. An impossible conclusion.

7. The position taken by the commanding general, American Expeditionary Forces, that the number and kind of patients to be evacuated to the United States must, from necessity, be a matter to be determined by him, is concurred in in this office.

8. It is recommended that the Surgeon General of the Army be authorized to require six ambulance ships of 10,000 tons each; plans and specifications of which should be submitted later. These ships should be purchased from funds of the Medical Department of the Army and operated solely under its jurisdiction and under the protection of the Geneva Convention. The six ships to be delivered at equal intervals between now and July 1, 1919.

9. A copy of the correspondence is hereto appended.

(Signed) W. C. Gorgas,
Surgeon General, U. S. Army.

541.4 E. E. (Misc. Div.)
War Department,
The Adjutant General's Office,
Washington, July 3, 1918.

From: The Adjutant General of the Army.
To: The Surgeon General.
Subject: Hospital ships.

1. The Secretary of War directs me to inform you that your request made in paragraph 8 of your first indorsement (S. G. O. 721.6, patients overseas), June 1, 1918, for authority to require six ambulance ships of 10,000 tons each, plans and specifications of which would be submitted later, to be purchased from funds of the Medical Department of the Army and operated solely under its jurisdiction and under the protection of the Geneva Convention, said ships to be delivered at equal intervals between now and July 1, 1919, is disapproved.

2. It is believed that satisfactory arrangements now exist between the Army and Navy for the evacuation of the sick and wounded of our overseas forces, and in the face of the present shortage of commercial bottoms, they should be transported on transports and the naval hospital ships, until the four 10,000-ton ships, which the Embarkation Service has asked the Emergency Fleet to provide through its building program of new construction required before December 31, 1918, and which the Emergency Fleet Corporation has agreed to do, are furnished and ready for service.

3. The handling and control of such ships is clearly an Embarkation Service problem.

4. If the Surgeon General of the Army desires to submit any special plans and specifications to be considered in connection with the construction of the hospital ships referred to, same should be furnished the Embarkation Service at the earliest possible date.

By order of the Secretary of War:

(Signed) Paul Giddings,
Adjutant General.

2 incls.

S. G. O. 721, 6 patients from overseas, Hoboken, N. J. (N).

War Dept., S. G. O., July 26, 1918. To the Embarkation Branch of the Purchase, Storage, and Traffic Division of the General Staff.

1. Returned.

2. Under the agreement the Navy is charged with the care of patients en route to the United States. In compliance with cable request, A. E. F., under date of July 23, it was requested that permanent sanitary personnel of the Army be assigned to these transports.

3. In a letter of June 7 this office submitted a tabulation showing the available bed capacity on troop transports, as reported by naval officials. This is considered insufficient to meet the requirements, and the transports not adapted to the care of sick and wounded in any great number.

4. If further criticism is to be avoided, some more adequate arrangements to care for the sick and wounded returning from France must be made. This office considers it an imperative necessity, in view of what may be expected in the very near future, as a result of recent activities, that the four ambulance ships now contracted for be completed without delay, and that at least six additional ships be contracted for, to be delivered between now and July 1, 1919. This office received the basic plans of the ships that are to be converted on July 23, and is now engaged in preparing suggestions as to alterations in the plans needed to meet our requirements.

(Signed) W. C. GORGAS,
Surgeon General, U. S. Army.

AUGUST 13, 1918.

From: The Surgeon General of the Army.
To: The Adjutant General, U. S. Army.
Subject: Hospital ships.

1. With reference to request from this office that ambulance ships be provided for this office for the use of troops returning from overseas (1st ind., June 1, 1918, and 2d ind., July 26, 1918, S. G. O. 721.6).

2. Under the articles of agreement between the Secretary of War and the Secretary of the Navy, the Navy is charged with the care of Army sick returning from France.

3. Under these conditions, the various requests that hospital or ambulance ships be provided for the use of this department are withdrawn.

(Signed) W. C. GORGAS,
Surgeon General, U. S. Army.

Following this lengthy correspondence, a further letter from the Adjutant General was received and answered by first indorsement, both of which follow:

SEPTEMBER 3, 1918.

Memorandum for the Surgeon General.
Subject: Hospital ships.

Referring to your letter of August 13, 1918, on the above subject, the Chief of Staff desires to know if your office acquiesces in the idea of having sick and wounded returned from France on transports only, thus removing them completely from the protection that might be afforded to them under the Geneva Convention.

For the Director of Operations.

(Signed) ROBERT E. WYLLIE,
Colonel, General Staff, Chief Equipment Branch,
Operations Division.

[1st ind.]

S. G. O. 571.1 hospital ships.
War Dept., S. G. O., September 11, 1918. To the Operations Division, General Staff.

1. Returned.

2. Under the articles of agreement between the Secretary of War and the Secretary of Navy, the Navy is charged with the care of patients returning from France on board ships under naval control. This office was informed that, under this agreement, the return of patients from overseas forces was purely a transportation problem to be solved by the Embarkation Service and the Navy.

3. The repeated request for ambulance ships was withdrawn in view of the above policy of the War Department, but this office does not acquiesce in the idea of removing the sick and wounded returning from France completely from the protection that might be afforded them under the Geneva Convention.

(Signed) CHAS. RICHARD,
Brigadier General, U. S. Army, Acring Surgeon General.

The armistice was signed before it had been necessary to bring back to this country a large number of patients from the hospitals of the expeditionary forces. The hospital facilities in France and England being sufficient to care for the patients then on hand, no difficulty was experienced in returning the sick and wounded on the regular transports, as they could be distributed over as long a period as was necessary. Had the war continued to render necessary the return of large numbers of patients on transports, it is uncertain whether the policy in force would have succeeded.

LIAISON SERVICE BETWEEN THE SURGEON GENERAL OF THE ARMY AND THE SURGEON GENERAL OF THE NAVY.

The agreement set forth above respecting the return of the sick and wounded from abroad by which such transfer of patients was under the jurisdiction of the Surgeon General of the Navy rendered necessary considerable communication between the two offices. This liaison service was rendered entirely by the officers of this division. Relations were at all times most harmonious and a marked spirit of cooperation existed.

CABLES.

To this division was intrusted the general charge of the cable service between the office of the Surgeon General and the American Expeditionary Forces. All cables sent from this country to the forces abroad went through the cable branch of the General Staff. This branch received all cables from overseas and distributed them to the departments and bureaus which were concerned with the contents. All such messages for this office were received in the Overseas Division and transmitted to the proper officer for action, careful check being kept that when answer was necessary it would be promptly attended to. This duty pertained more practically to the Administrative Division of the Surgeon General's Office, and during the latter part of the war was transferred to that division.

CONFIDENTIAL INFORMATION.

During a portion of the war the Overseas Division was the custodian and branch of transmittal in the Surgeon General's Office of all confidental information received from the War Department. Upon receipt of any confidential communications, copies were made and distributed to the officers concerned. Such documents were at all times kept securely locked in metal filing cases.

PERSONNEL.[b]

(April, 1917, to December, 1919.)

Noble, Robert E., Maj. Gen., M. D., chief.
Hart, W. L., Col., M. C., chief.
Morris, S. J., Col., M. C., chief.

Kerns, H. N., Maj., M. C.
Tandrop, O. A., Maj., S. C.
Baldwin, R. E., Capt., M. C.
Wyrick, Guy, Capt., S. C.
Seidler, August, First Lieut., S. C.

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[b] In this list have been included the names of those who at one time or another were assigned to the division during the period April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

REFERENCES.

(1) Letter from the Surgeon General to The Adjutant General, March 3, 1919. Subject: Information Regarding Regular Army Units. On file, Record Room, S. G. O., 322.3 (Ambulance Companies) (A).

(2) Manual for the Medical Department, 1916, corrected to April 15, 1917, 153, 535, 541.

(3) Annual Report of the Surgeon General, United States Army, 1918, 444 et seq.

(4) Ibid., 304.

(5) Office order No. 64, S. G. O., July 10, 1918.

(6) Office order No. 97, S. G. O., November 30, 1918.

(7) Correspondence. On file, Record Room, S. G. O., 177904; and 191421 (Old Files); 632 (Hospitalization Program, A. E. F.) (Y).

(8) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1180–1183.

(9) Cables from General Pershing, Nos. 759 and 1037, March 21 and May 2, 1918, respectively. Cablegram File. Memo. from the Surgeon General, United States Army, to the Chief of Staff, April 30, 1918. On file, Record Room, S. G. O., Confidential File.

(10) First indorsement, W. D., A. G. O., to the Surgeon General, United States Army, June 15, 1917. On file, Record Room, S. G. O., 128732 (Old Files).

(11) Memo. from the Surgeon General to the Chief of Staff, April 30, 1918. On file, Record Room, S. G. O., Cablegram File.

(12) Cable No. 751, from General Pershing March 19, 1918. On file, Record Room, S. G. O., Cablegram File. Letter from The Adjutant General of the Army to the Surgeon General, United States Army, August 25, 1918. On file, Record Room, S. G. O., 370.2.

(13) First indorsement from The Adjutant General of the Army to the Surgeon General, United States Army, May 11, 1917. On file, Record Room, S. G. O., 353. (Medical Officers' Training Camps).

(14) Tables of Organization No. 28, Series A, Sanitary Train (Infantry Division); and Tables of Organization No. 40, Series A, Medical Department.

(15) Bull., No. 32, W. D., May 24, 1917.

(16) Circular letter, S. G. O., December 6, 1917.

(17) Tables of Organization (Medical Department). On file, Record Room, S. G. O., 320.3–1 (Table Organ.).

(18) Annual Report of the Surgeon General, United States Army, 1919. Vol. II, 1180.

(19) Memo. from the Surgeon General to the Chief of Staff, April 30, 1918. On file, Record Room, S. G. O., Confidential File. Letter from the Surgeon General, United States Army, to The Adjutant General, October 14, 1918. On file, Record Room, S. G. O., 321.6 (Med. Dept.).

(20) Correspondence. On file, Record Room, S. G. O., 322.3 (A. E. F.) (Y).

(21) Manual for the Medical Department, 1916, corrected to April 15, 1917, 227.

(22) Lists. On file, Record Room, S. G. O., 322.3 (Misc.).

(23) Hospitalization, A. E. F. Chief Surgeon's Office, Hospitalization Division, 7th edition, November 1, 1918. On file, Record Room, S. G. O., 322.3 Y.

(24) Letter from the Surgeon General to The Adjutant General, December 6, 1917. Subject: Organization Additional Medical Department Formations; second indorsement, from The Adjutant General to the Surgeon General, United States Army, December 28, 1917. Subject: Authorization of Formations. On file, Record Room, S. G. O., 322.3–1.

(25) List containing evacuation ambulance companies. On file, Record Room, S. G. O., 322.3 (Misc.).

(26) Weekly report for November 23, 1918, from Overseas Division. On file, Record Room, S. G. O., Weekly Report File.

(27) S. O., 75, W. D., June 23, 1917.

(28) Correspondence. On file, Record Room, S. G. O., Section V. (Replacement Units).

(29) Correspondence. On file, Record Room, S. G. O., 322.3 (Mobile Hospitals) and (Mobile Surgical Units).

(30) Correspondence. On file, Record Room, S. G. O., 541.1.

CHAPTER XIII.

DIVISION OF INTERNAL MEDICINE.

While the modern development of specialism has greatly increased the sum of medical knowledge, from a military point of view it has the disadvantage that if the best results are to be attained medical officers can not be indiscriminately assigned to duty, nor can members of a profession which consists so largely of specialists always be trusted, in making examinations for entrance into the Army, to give proper consideration to conditions outside of their specialty. It seemed desirable, therefore, that specialists should supervise the appointment of examiners of recruits and select the medical officers to be detailed to positions of medical importance. Such considerations led to the establishment of the Division of Internal Medicine in the Surgeon General's Office shortly after the United States entered the war. (See Chart XIV.)* No formal order was issued for the organization of this division.

TUBERCULOSIS SECTION.

The Tuberculosis Section, the first to begin work, was inaugurated on June 6, 1917, when the officer assigned to take charge of the section reported for duty.[1] The war experience having convinced the allied nations of the necessity of expert revision of the diagnosis of tuberculosis, it was decided to reexamine the Army of the United States for tuberculosis.[2] This work was done by boards of three or more medical officers who were especially selected for the purpose on the advice of the leading internists of the country.

After some delay, which arose chiefly from the difficulty of promptly obtaining men with the necessary qualifications, a sufficient number of boards to provide for the examination of the larger organizations was created. In March, 1918, the work was practically completed so far as the forces in the United States were concerned, as many as 600 examiners having been engaged upon it.[3] A total of 1,200,990 men had been examined, and of these 9,648 were recommended for discharge on account of tuberculosis. Of the total just mentioned, 190,398 belonged to the mobile troops of the Regular Army with 1,444 rejections, a percentage of 0.758; 466,157 to the National Guard with 4,905 rejections, a percentage of 1.099; and 399,429 to the National Army with 2,597 rejections, a percentage of 0.65.[3] With the increment of the draft called March 26, 1918, the primary examination after entrance into the military service was undertaken by the tuberculosis examiners so far as the lungs were concerned.

The total number of drafted men rejected for tuberculosis by Army examiners was 12,597 out of 2,040,051 examined, or 6,174 per million. The grand

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* During the greater part of the war period this division was designated, as in the text, Division of Internal Medicine. The Cardiovascular Section and the Section of Gastroenterology, at the time covered by this chart, were administered under General Medicine.

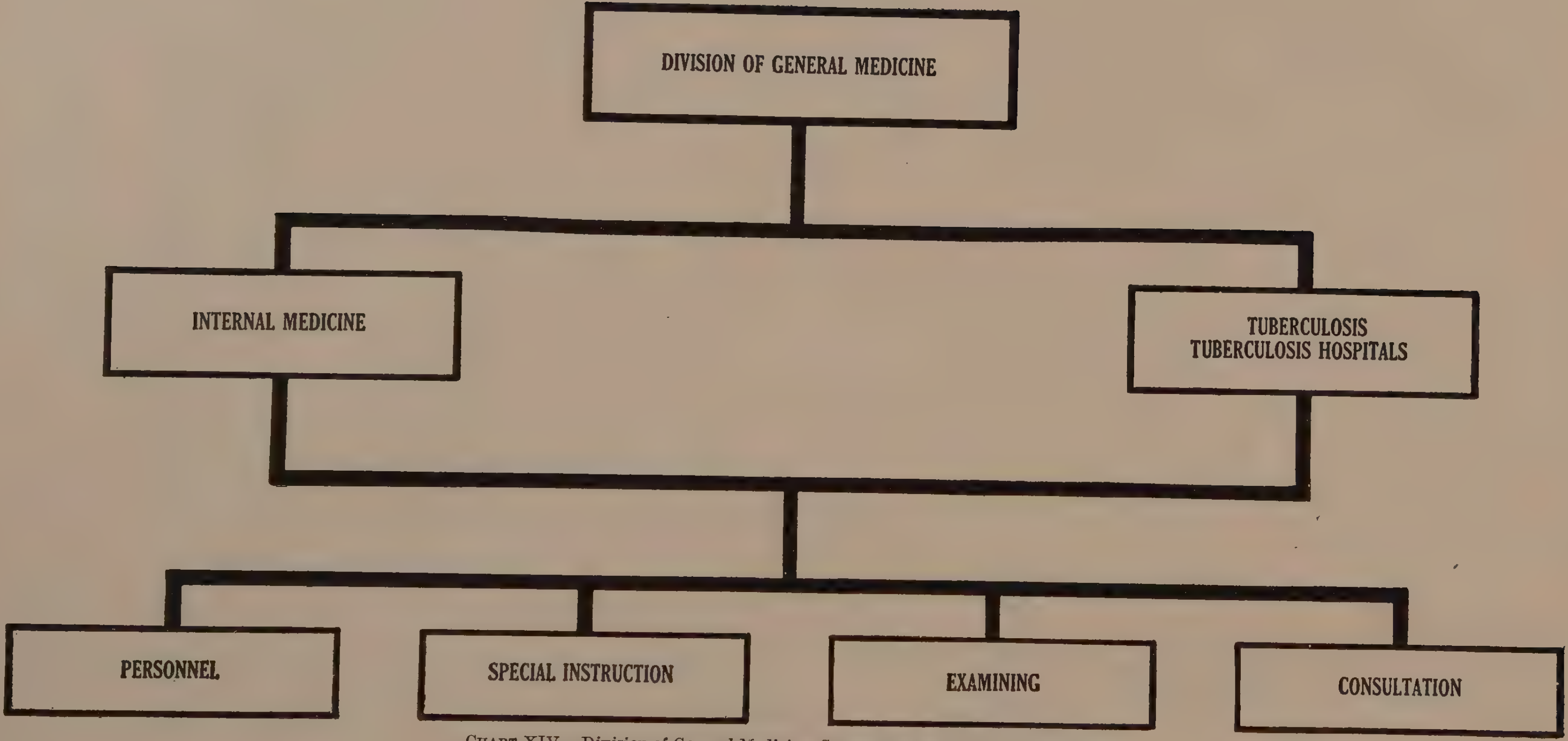
DIVISION OF GENERAL MEDICINE
INTERNAL MEDICINE
TUBERCULOSIS
TUBERCULOSIS HOSPITALS
PERSONNEL
SPECIAL INSTRUCTION
EXAMINING
CONSULTATION

CHART XIV.—Division of General Medicine, Surgeon General's Office, June, 1918.

total of examinations, including both reexaminations and primary examinations, by special tuberculosis examiners, up to January 1, 1919, was 3,288,669, the total number rejected by these boards being 22,596, or 6,871 per million.[3] After November, 1918, the examining boards were chiefly engaged with the examinations for demobilization, 2,500,662 men having been examined up to June 30, 1919, of whom 1,356 were found to be tuberculous, or 542 per million.[4]

The work of reexamination could not be organized in time to examine the first army of Pershing. More than 44,000 men of the first expedition did not receive a reexamination for tuberculosis.[3] There were likewise some organizations sent abroad at a later time, as, for example, the hastily assembled negro stevedore regiments, which it was not practicable to examine by special boards, the difficulty being in part, failure to learn in time of the existence of the organizations in question, partly the scarcity of competent examiners, all those available being fully occupied at the larger camps.

As to the utility of the reexaminations it was evident that cases of tuberculosis occurred chiefly among soldiers who had not been specially examined in the United States, and that although negroes constituted but a small fraction of the American Expeditionary Forces they contributed 14 per cent of the cases of pulmonary tuberculosis returned to this country.

The primary examinations of drafted men were made under great difficulties on account of the large numbers which arrived in rapid succession and which were required to be examined without delay. The reexaminations had been conducted in a leisurely manner. Each examiner had been expected to go over at least 50 men on each day of examination, but with practice the more alert soon found that they could make 100 examinations in a day. But in the second draft it became necessary to much exceed this number, reaching in some instances figures which seem almost incredible. Thus one team of three examined 1,763, 1,854, and 1,944 men, respectively, in three successive days. Many others nearly equaled these figures.[3] Of course such speed was not desirable. It prevented detailed study of the individual case and could not be expected to reveal more than the manifest and active cases. But that the work was not too fast to accomplish a definite objective result is shown by the fact that, when large numbers were concerned, the percentage of rejections was always between 0.5 and 0.6 of 1 per cent.[3]

These facts are believed to be worthy of record in a history of administration in that they show the need of a closer liaison between the Medical Department and the executive officers of the War Department. It was not a military advantage, but quite the reverse, to send men into camps more rapidly than they could be properly handled. Only the fact that special methods for rapid examination had been taught permitted the examiners to accomplish what they did in the way of lung examinations when so overwhelmed with work.

It was soon found to be advantageous to institute courses of instruction in the physical diagnosis of lung affections, especially tuberculosis, not only with a view to increasing the skill of the examiners but also in order to observe their work and to classify them according to their proficiency.[5] Instruction of this kind was given at the Army Medical School and at the three medical officers' training camps, at Fort Oglethorpe, Ga., Fort Riley, Kans., and Fort Benjamin Harrison, Ind. A school was also in operation at the U. S. Army

General Hospital No. 16, New Haven, Conn., in which, in addition to courses in physical diagnosis, instruction was imparted in hospital management and in the treatment of tuberculosis with a view to the training of medical officers for service at tuberculosis hospitals. Courses of physical diagnosis were given by traveling instructors to the medical officers of various camps and hospitals.

In addition to the tuberculosis examiners, a tuberculosis specialist was assigned to the base hospital of each of the division camps and to some of the general hospitals. A division tuberculosis specialist was also attached to the mobile troops of many of the divisions. It having been learned, however, that these specialists, when sent abroad, were detached from their divisions and assigned to other duties, it was thought best, because of the scarcity of qualified experts, to discontinue the practice.

The incidence of tuberculosis in the Army in France was small. It was smaller, indeed, than would appear from the number of men sent home with that diagnosis, for the reason that many cases were being returned as tuberculous in which there was either no genuine evidence of active disease at all or a nontuberculous affection, such as unresolved pneumonia, was present. To remedy this evil an expert was sent abroad.[6] Upon consulation with the medical authorities of the American Expeditionary Forces, it was decided to follow the example of the French and of the Italian Armies in the establishment of diagnostic centers, through which patients who had been pronounced tuberculous were required to pass before being sent to this country. Accordingly, three centers were established, one at Base Hospital No. 8, Savenay, one at Base Hospital No. 20, Châtel Guyon, and another at Base Hospital No. 3, Vauclaire.[7] This action rapidly reduced to a minimum the number of cases in which the diagnosis could not be sustained upon arrival in the United States. After the signing of the armistice, however, there was again a relaxation of the necessary precautions, a fact of less importance when the main object was to return those disabled as speedily as possible, irrespective of the diagnosis. In order to sift out the nontuberculous, disembarking patients were evacuated as quickly as practicable to the tuberculosis hospital nearest to the port of arrival, thus practically transferring the *centres du triage* to the United States. Up to August 1, 1919, the total number of patients who had been returned from Europe with the diagnosis of tuberculosis was 6,693.[4]

In view of the wide differences in the interpretation of the physical signs of tuberculosis and in the nomenclature that describes these signs, it was apparent from the outset that there was need of a standard as to what signs should be regarded as normal, what as evidence of disease, and what as a cause for rejection, and also as to the manner in which the tuberculous lesions found should be described. Uniformity of practice and of nomenclature, in other words, was felt to be necessary. Instructions were issued [8] for this purpose. At first they were regarded with disfavor by some of the examiners. The standardization, however, really amounted to the creation of a basis of mutual understanding, so that each examiner not only knew what the others meant by certain language, but had a guide as to the position of the Surgeon General's Office with regard to the criteria for acceptance and rejection, which fact soon became apparent to the examiners. The course of instruction in physical diagnosis also helped the standardization, for it not only taught a technique and ascertained the capabilities of the pupils, but served to interpret and enforce the provisions of the circular of instructions, and thus to secure a more general and implicit adoption of the principles which were contained in it.

The example set by the publication of this circular was soon followed by the Cardiovascular Section [9] and the Neuropsychiatric Section [10] in publishing circulars as guides to their examiners. At a later time a board, composed of representatives of all the specialties in the Office of the Surgeon General, prepared a manual for the use, in the first place, of the draft boards, and, in the second place, as a recruiting manual [11] for voluntary enlistments.

The insertion into the medico-military organization of groups of experts who assumed the responsibility of revision was at best a temporary makeshift. The commanding officers had natural objections to the interruption of training caused by reexaminations. The most obvious objection was that the reexaminations came too late—men who had been unnecessarily rejected were already lost to the service. Hence the examiners functioned chiefly in rejecting men whom others had accepted, and the idea was not unnaturally prevalent that the object of the examination was primarily to apply more rigid rules with a view to elimination, the result of which might be an unnecessary diminution of the forces. The utilization of specialists in the primary Army examinations of the second draft was a great step in advance, not only because their work no longer interrupted military training but because unnecessary rejections were prevented in these examinations.

Hospital care was provided for tuberculous patients in six institutions, with a total of 6,750 beds.[5] Full details of these institutions are given in Volume VI, Hospitals, United States.

The number of deaths from pulmonary and miliary tuberculosis reported in the Army for the period from September 1, 1917, to June 25, 1919, is 1,607. Taking as the strength of the Army the figures reported for May 1, 1919—namely, 2,121,396 men—the death rate for the period is found to be 758 per million.[4] But since tuberculous patients were retained in the service after their organizations were demobilized, the deaths really occurred in a strength of over 3,000,000 men, so that the rate just given is too high. On the other hand, some tuberculous patients were discharged who subsequently died of the disease, hence the rate should be somewhat increased on their account, if it were possible to determine their number. The figures given are therefore only a rough approximation to the actual mortality. The total number of cases of pulmonary tuberculosis under treatment at tuberculosis hospitals in the United States on June 30, 1919, was 4,882.[5]

CARDIOVASCULAR SECTION.

ORGANIZATION.

In June, 1917, an officer was assigned to duty in the Surgeon General's Office for the purpose of organizing the entire work of the Army which concerned diseases of the heart and blood vessels.[12] This was the beginning of the Cardiovascular Section of the Division of Internal Medicine, which exercised control under the Surgeon General, of this work until September 9, 1919, when the Division of Internal Medicine, along with the Division of Surgery, was transferred to the Hospital Division.[13]

CARDIOVASCULAR EXAMINATIONS.

The decision to have the special examination of the Army for tuberculosis include an examination of the circulatory system carried with it the obligation to provide for this purpose examiners specially trained and experienced in cardiovascular diagnosis. The duties of the Cardiovascular Section during the summer and autumn of 1917 were concerned chiefly with the procuring of properly qualified examiners, the directions of the examinations in the various camps, the standardization, as far as possible, of the methods of examination and the criteria of diagnosis, and the collection and tabulation of reports and records. A circular [11] was issued for the instruction of the cardiovascular examiners as to the methods of examination, the standards of diagnosis, and the policy governing the acceptance or disqualification of the examined soldiers.

After the reexamination of the soldiers of the Regular Army and the National Guard, the cardiovascular examiners were assigned to the task of assisting in the physical examination of the men drafted for the National Army upon their arrival at the mobilization camps. This work was continued almost uninterruptedly until the signing of the armistice brought recruiting to a close.

The method of conducting the cardiovascular examinations was not everywhere the same. In most camps every recruit was examined by the Cardiovascular Board, but in a few camps the routine heart examinations were made by the tuberculosis examiners at the time of the lung examination, only doubtful and suspicious cases being referred to the cardiovascular examiners for disposition. Experience showed that the former method, although requiring a somewhat larger number of examiners, was much the more satisfactory.

Throughout the early period of the war the various special boards of examiners were quite independent of each other and were responsible only to their respective divisions in the Surgeon General's Office. The obvious disadvantages of this arrangement led, in September, 1918, to the abolition of the separate special boards as such, and the formation, at each camp receiving draft increments, of a general examining board, which included all the necessary special examiners, and which was under the control of the camp surgeon and the Division of Sanitation of the Surgeon General's Office.[14] This arrangement, while a great improvement over the earlier one, was open to the serious objection that it removed from the direction and supervision of the special professional divisions of the Surgeon General's Office the professional activities of officers especially chosen and trained by them for this work. This difficulty was soon overcome, however, by an understanding between the Division of Sanitation and the professional divisions whereby the purely professional aspects of the work of the special examiners, as well as the responsibility for the procuring and training of such examiners, remained in the hands of the professional divisions, and requests for orders relating to changes in personnel and to transfers originated in the professional division concerned but required the approval of the Division of Sanitation.

STATISTICS OF CARDIOVASCULAR EXAMINATIONS.

The percentage of rejections for cardiovascular disease varied considerably in different camps and also varied at different periods of the war. In general, the rejection rate was higher during the later drafts than in the early months of the war; this increase conforming to the somewhat stricter requirements of the Selective-Service Regulations of that period.

Among 1,000,000 cardiovascular examinations of drafted men, the percentage of rejections was 1.15 while 0.88 per cent of those accepted for military service were assigned to limited service.[15] In different camps the rate of rejections ranged from 0.15 per cent to 4 per cent, but in general it fluctuated between 0.5 per cent and 1.5 per cent, and these latter figures, it is believed, may be looked upon as representing the normal percentage limits of rejections for cardiovascular disorders among troops of corresponding age and recruited under conditions such as obtained in our drafts, where the more obvious cases of heart disease had already been eliminated by the physical examinations of the local draft boards.

An analysis of the causes of disqualification among the 11,562 recruits rejected for cardiovascular defects in the 1,000,000 examinations gives the following results:[15]

	Per cent.
Chronic valvular disease	49
Other organic diseases (including myocarditis, cardiac hypertrophy, congenital defects, aortic aneurism, etc.)	19
Functional disorders (including the irritable heart or effort syndrome, tachycardia, "hyperthyroidism," etc.)	23

It thus appears from these figures that 68 per cent of all the men disqualified by reason of cardiovascular disorders were the victims of organic heart disease. Such a conclusion, however, is by no means warranted for the reason that there is evidence of various kinds to show that there was constantly a tendency on the part of examiners to classify functional conditions, such as the irritable hearts, as instances of organic disease. Frequently such conditions were diagnosed as myocarditis and, more frequently still, as mitral insufficiency or mitral stenosis.

In the boards manned by examiners of the greatest experience and soundest judgment, the rejections for organic heart disease ran quite uniformly at from 0.2 to 0.4 per cent.[16] Where the disqualification rate was about 1 per cent, it seems safe to assume that not more than one-third of the number were suffering from organic heart disease. The propriety of rejecting the remaining two-thirds is not questioned, for they represented the more severe and intractable cases of functional disorder, but it was erroneous to classify them as cases of organic disease.

INSTRUCTION.

It was early determined that the medical staff of each of the large base hospitals should include a "cardiovascular specialist";[17] that is, an officer with adequate training in the modern aspects of cardiac diagnosis, including familiarity with the use of the polygraph and the electrocardiograph. In order to supplement the supply of officers with these qualifications, a course of instruction was given at the hospital of the Rockefeller Institute in the summer and autumn of 1917.[18] Considerable difficulty was experienced in securing a sufficient number of properly qualified cardiovascular examiners, so that it was soon found necessary to establish special courses of training for such examiners at the medical officers' training camps (Fort Riley, Kans., and Fort Oglethorpe, Ga.).[18] The courses were short and intensive, lasting from two to three weeks, and were designed to meet the special diagnostic requirements of the cardiovascular examinations. Upon the opening, in June, 1918, of General Hospital No. 9, at Lakewood, N. J., with its special heart service, courses of instruction in cardiac diagnosis and in the management and physical training of the functional heart disorders were begun and were continued up to the closing of the hospital.[18]

A great need arose for specially trained officers to take over the management of the large numbers of cases of irritable heart which were accumulating in the camps, both in this country and in France, since the results of treatment were found to depend largely upon the skill and special training of the officer assigned to this work. By an arrangement made with the British authorities, a certain number of our medical officers, selected for such special work in the American Expeditionary Forces, were given a few months of valuable training in the Army Heart Hospital at Colchester, England, before proceeding to their stations in France.[18]

HOSPITAL CARE.

The problem of the hospital care of the heart patients, especially of those returned from overseas, came in for much consideration and discussion. It was finally met by the decision not to attempt to concentrate all heart patients in special heart hospitals but to designate a number of general hospitals to which heart patients might be sent, and to use one hospital (General Hospital No. 9, Lakewood, N. J.) for the special study of that form of heart disorder which constituted the real heart problem of the Army, namely, functional disorders known as the irritable heart of soldiers. For this purpose a special heart service was established in this hospital, with thoroughly equipped laboratories and a staff of specially trained assistants. Following the lead of the British Army, methods of treatment by means of graded physical exercises were developed and standardized.

Although the duties of the Cardiovascular Section at the start were merely those connected with cardiovascular examinations, the section gradually took over various other activities relating to internal medicine. Among the first and most important of these was the procurement of properly qualified officers to man the medical services in the 32 base hospitals then in process of organization for the camps of this country and later for the many general hospitals, for the overseas base hospitals, and for the evacuation hospitals. This required a systematic canvassing of the entire country for trained internists who might enter the service, and the adoption of some method of grading and training those already in the service.

In the successful prosecution of these plans, a point of fundamental importance was the adoption by the Surgeon General's Office of the policy that officers highly qualified in any special branch of medicine or surgery should be assigned to the corresponding professional division or section of the Surgeon General's Office and should thereafter be under the control of such division or section.[19] This made it possible to secure many highly trained internists for the Army who in all probability would not otherwise have applied for a commission unless they could be assured that their work in the Army would be of the kind to which they were accustomed and for which they were specially qualified.

In the enormously rapid expansion of hospital facilities, the need for highly trained men to fill the more important positions in the medical services became so great that much attention had to be given to the training of men in the hospitals. Medical instruction, therefore, became an important part of the work of nearly all the great base hospitals. A special school for chiefs of medical service,[20] established at the base hospital at Camp Jackson, Columbia, S. C., proved to be of great usefulness. To this school were sent newly commissioned officers who were believed to possess the necessary professional qualifications for the position of chief of medical service, for intensive training in the administrative duties of the position, and for a practical test of their ability to administer a large medical service.

SECTION OF GASTROENTEROLOGY.

The Section of Gastroenterology was established largely as a result of the efforts of a committee from the Section on Gastroenterology of the American Medical Association, appointed at the meeting in New York in June, 1917. Its members had a number of conferences with the Surgeon General and with the Division of Internal Medicine. In August, 1917, it was agreed that a gastroenterologist should be assigned for duty at each of the camp hospitals.[21] These gastroenterologists were to look after patients with digestive disorders in the hospitals and were also to assist the chiefs of the medical services in the hospitals in the general medical work.

In October the Section on Gastroenterology was actually created in the Surgeon General's Office.[22] The first duty of the section was to select and assign a gastroenterologist to each of the 33 base hospitals and to outline the work which they were to perform.[23]

In the meantime the epidemics of measles and pneumonia which occurred in the winter of 1917–18 filled the hospitals with acute cases, and all the gastroenterologists were very properly called upon to assist in the emergency. Therefore, but little was accomplished in organizing the work in gastrointestinal diseases before the spring of 1918. An effort was made to standardize the work in gastrointestinal diseases in all the hospitals, which by that time was making good progress, there having been established in a few of the hospitals a gastrointestinal ward with a gastroenterologist in charge.

In April, 1918, a memorandum on the examination of gastrointestinal patients was formulated and promulgated.[24] This memorandum outlined suggestions for the anemnesis and the diagnostic methods generally employed by gastroenterologists, including history taking, physical examination, laboratory tests, and X-ray examination in connection with test breakfasts.

The Section of Gastroenterology was discontinued July 1, 1918.[25]

REORGANIZATION OF DIVISION OF INTERNAL MEDICINE.

As a part of the reorganization of the Office of the Surgeon General, effected in November, 1918 (see Organization Chart XXIV),[26] the three Divisions of Internal Medicine, Neuropsychiatry, and Psychology were consolidated into the Division of Medicine, which in turn was composed of the following four sections: Internal Medicine, Tuberculosis, Neuropsychiatry, and Psychology. This reorganization was for the purpose of convenience in office administration only and changed in no essential the scope or character of the work or the personnel of the divisions.

CONSULTANTS IN INTERNAL MEDICINE.

In an effort to improve the character of the professional work and to bring the personnel of the medical services of the hospitals into close touch with the Division of Medicine, the Surgeon General, in November, 1918, authorized the appointment of five medical officers as consultants in internal medicine.[27] Each of these consultants was assigned to one of the five geographical districts into which the country was divided for this purpose, and each occupied his time in visiting the various hospitals in his district, in supervising the work done, in learning to know the personnel of the medical services, and in establishing closer and more personal relations between these officers, and the Office of the Surgeon General. The success of this arrangement was immediate and striking, and the benefits of the officers of the medical services of the hospitals and to the Division of Medicine of the Surgeon General's Office were many and real.

On September 9, 1919, the Division of Medicine was transferred to the Hospital Division.[13]

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Brooke, Roger, Col., M. C., chief.
Bushnell, G. E., Col., M. C., chief.
Conner, L. A., Col., M. C., chief.
Longcope, W. T., Col., M. C., chief.

Barrett, F. J., Lieut. Col., M. C.
Butler, Glenworth R., Lieut. Col., M. C.
Cohn, Alfred E., Lieut. Col., M. C.
Foster, Nellis B., Lieut. Col., M. C.
Harris, Seale, Lieut. Col., M. C.
Irons, Ernest E., Lieut. Col., M. C.
Balling, R. H., Maj., M. C.
Hall, Josiah N., Maj., M. C.
Herrick, W. M., Maj., M. C.
Howland, John, Maj., M. C.
Janeway, Theodore C., Maj., M. C.
McLean, Franklin C., Maj., M. C.
McKellar, H. R., Maj., M. C.
Miller, H. M., Maj., M. C.
Peabody, Francis W., Maj., M. C.
Pemberton, R., Maj., M. C.
Phares, W. L., Maj., S. C.
Rinehart, S. M., Maj., M. C.
Williams, F. E., Maj., M. C.
Talbot, E. S., Capt., M. C.
Lincoln, Edward A., First Lieut., S. C.
May, M. A., First Lieut., S. C.
Mertz, Paul A., First Lieut., S. C.
Metcalf, J. T., First Lieut., S. C.
Sutton, Don C., First Lieut., M. C.
McKnight, Mary Pearson, Contract Surg.
Morgan, Audrey, Contract Surg.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

REFERENCES.

(1) S. O., No. 120, W. D., May 24, 1917, par. 38; S. O., No. 143, W. D., June 21, 1917, par 50. Letter from Col. George E. Bushnell, M. C., to Col. Charles Lynch, M. C. On file, Historical Division, S. G. O.

(2) Telegram, September 17, 1917, from the Surgeon General to division surgeon (of six different camps) ordering a special reexamination. On file, Record Room, S. G. O., 172229 (Old Files).

(3) Reports, tuberculosis boards. On file, Record Room, S. G. O., 730.

(4) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1071.

(5) Weekly reports, Tuberculosis Section, Division of Internal Medicine. On file, Weekly Report File, S. G. O. Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1072.

(6) Cablegram No. 832, par. 3, February 24, 1918, from the Surgeon General to General Pershing. Cablegram No. 661, February 28, 1918, from General Pershing to the Surgeon General. Cablegram No. 889, par. 15, March 5, 1918, from Surgeon General to General Pershing. On file, Record Room, S. G. O., Cablegram File.

(7) Tuberculosis in the A. E. F. Report from senior consultant in tuberculosis, A. E. F. On file, Record Room, S. G. O., 710 (T. B., A. E. F., France) (Y).

(8) Cir. No. 20, S. G. O., June 13, 1917.

(9) Cir. No. 21, S. G. O., July 14, 1917.

(10) Cir. No. 22, S. G. O., Aug. 1, 1917.

(11) Instructions for the Physical Examination of Drafted Men at National Army Cantonment, (issued by the War Department, 1917, and including various memoranda and circulars, S. G. O.) On file, Record Room, S. G. O., Document File.

(12) S. O., No. 151, W. D., June 30, 1917, par. 18.

(13) Office Order No. 777, S. G. O., September 9, 1919.

(14) Letter from The Adjutant General to all department commanders, commanding generals of all divisions and ports of embarkation, and commanding officers of all camps, recruit depots, and excepted places, August 22, 1918. Subject: Special Examiners. On file, Mail and Record Division, Adjutant General's Office, 342.15 (Misc. Div.).

(15) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1078.

(16) Memo. for the Provost Marshal General from the Surgeon General, September 17, 1917, quoting telegrams sent division surgeons at six National Army camps. On file, Record Room, S. G. O., 172229 (Old Files).

(17) Memo. No. 7, S. G. O., August 23, 1917. Cir. No. 21, S. G. O., July 14, 1917.

(18) Annual Report of the Surgeon General, United States Army, 1918, 346.

(19) Memo., S. G. O., October, 1917. On file, Record Room, S. G. O., 024.2 (Administrative Division) 1917.

(20) Letter from the commanding officer, base hospital, Camp Jackson, S. C., to the Surgeon General, August 1, 1918, inclosing course for Chiefs of Medical Service. On file, Record Room, S. G. O., 353 (B. H., Camp Jackson) (D).

(21) Letter from the Surgeon General to The Adjutant General of the Army, June 26, 1917, par. 2. Subject: Detail of Officers in Medical Reserve Corps for Duty as Specialists in Army Camps. Approved, July 10, 1917. On file, Record Room, S. G. O., 189010 (Old Files). Letter from Col. George E. Bushnell, M. C., to Dr. Martin E. Rehfuss, August 20, 1917. Subject: Gastroenternologists in Camps of National Guard and National Army. On file, Record Room S. G. O., 203147–D (Old System).

(22) S. O., No. 226, par. 100, W. D., September 28, 1917. Annual Report of the Surgeon General, United States Army, 1918, 348.

(23) Letter from Maj. Seale Harris, M. C., to Lieut. Col. Henry Page, Camp Greenleaf, October 21, 1917, par. 1. Subject: Selecting a Gastroenterologist in Each of the 33 Hospitals. On file, Record Room, S. G. O., 211 (Gastroenterologists).

(24) Memo., S. G. O., April 15, 1918. On file, Record Room, S. G. O., 730 (Gastroenterology).

(25) Memo., No. 53a, S. G. O., July 1, 1918. On file, Record Room, S. G. O. 730 (Gastroenterology).

(26) Office order No. 97, S. G. O., November 30, 1918.

(27) Correspondence, Memo. from Col. L. A. Connor to the Surgeon General, United States Army November 16, 1918. Subject: Medical Consultants. On file, Record Room, S. G. O., 211 (Consultants).

CHAPTER XIV.

DIVISION OF NEUROLOGY AND PSYCHIATRY.

PRELIMINARY WORK.

The beginnings of what became the Division of Neurology and Psychiatry of the Surgeon General's Office were made in March, 1917, when three distinguished civilian neurologists [a] conferred with the Surgeon General with reference to the problem of nervous and mental diseases. Through the efforts of these specialists, with private financial support, and later with the assistance of the Rockefeller Foundation, inspections were made of the larger military hospitals at San Antonio and El Paso, Tex., and the United States Disciplinary Barracks at Fort Leavenworth, Kans., in order to determine the facilities of the Government with respect to mental and nervous diseases in the event of war. Upon the declaration of war the chairman of the National Committee for Mental Hygiene appointed a Committee on Furnishing Hospital Units for Nervous and Mental Disorders to the United States Government. The name was subsequently changed to War Work Committee. The activities of this committee continued throughout the war.

First of all, on the authority of the Surgeon General,[1] it set about recruiting a special personnel, circularizing the medical profession and special hospitals for this purpose. There were received in all 795 applications for commission in the Medical Reserve Corps. After considering the special fitness of the applicants the papers were forwarded to the Surgeon General's Office, with indications as to the aptitude of the candidates, and with recommendations as to rank, based on professional standing.[2] A total of 564 commissions were granted such applicants.

The committee also, in much the same manner, secured the names of nurses and attendants, and cooperated with the Surgeon General in regard to their induction into the service. It was from plans drawn by this committee that the type of neuropsychiatric pavilion for the camps was decided on.[1]

As the war proceeded, the committee continued to cooperate with the civil community. It assisted in making the arrangements by which recruits who became insane prior to or immediately after enlistment would be cared for by their own States, and prepared a classified list of State hospitals, showing their standards in reference to internes and care of patients.

ORGANIZATION OF DIVISION.

As mobilization progressed the Surgeon General found it necessary to create in his office an administrative division for the conduct of this work. Accordingly, the Division of Neurology and Psychiatry was created.[3]

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[a] Dr. Stewart Paton, of Princeton University; the late Dr. Pearce Bailey, of the Neurological Institute, New York City; and Dr. Thomas W. Salmon, medical director of the National Committee for Mental Hygiene.

Prior to the organization of this division there was no neurological or psychiatric organization in the Office of the Surgeon General or in the Medical Department. The social and psychiatric department of the Fort Leavenworth Disciplinary Barracks had shown and was showing the value of psychiatry in relation to deliquency and disciplinary problems,[4] but no special examinations as to the mental fitness of volunteers had been made at recruit depots or recruit depot posts or of applicants for commission in the Regular Army. There was a small number of regular medical officers who were recognized as having a knowledge of psychiatry, obtained for the most part during detail at the Government Hospital for the Insane (St. Elizabeths Hospital, Washington, D. C.). With the exception of the service at the Letterman General Hospital, however, the special equipment of these officers was utilized as it would have been had their professional leanings been in another direction. The creation of this division, therefore, began a new chapter in the history of the Medical Department. The functions of the division are shown in Chart XV.

Bulletin No. 4, W. D., February, 1918, covers the subject as follows:[5]

> Officers with special experience in nervous and mental diseases have been added to the Medical Department of the Army. Such officers are detailed at all base hospitals and with many divisions. Most base hospitals have also special nurses and therapeutic appliances for the care of nervous and mental diseases. The services of these officers and nurses are available, through their superior officers, for consultation in all matters pertaining to such diseases.

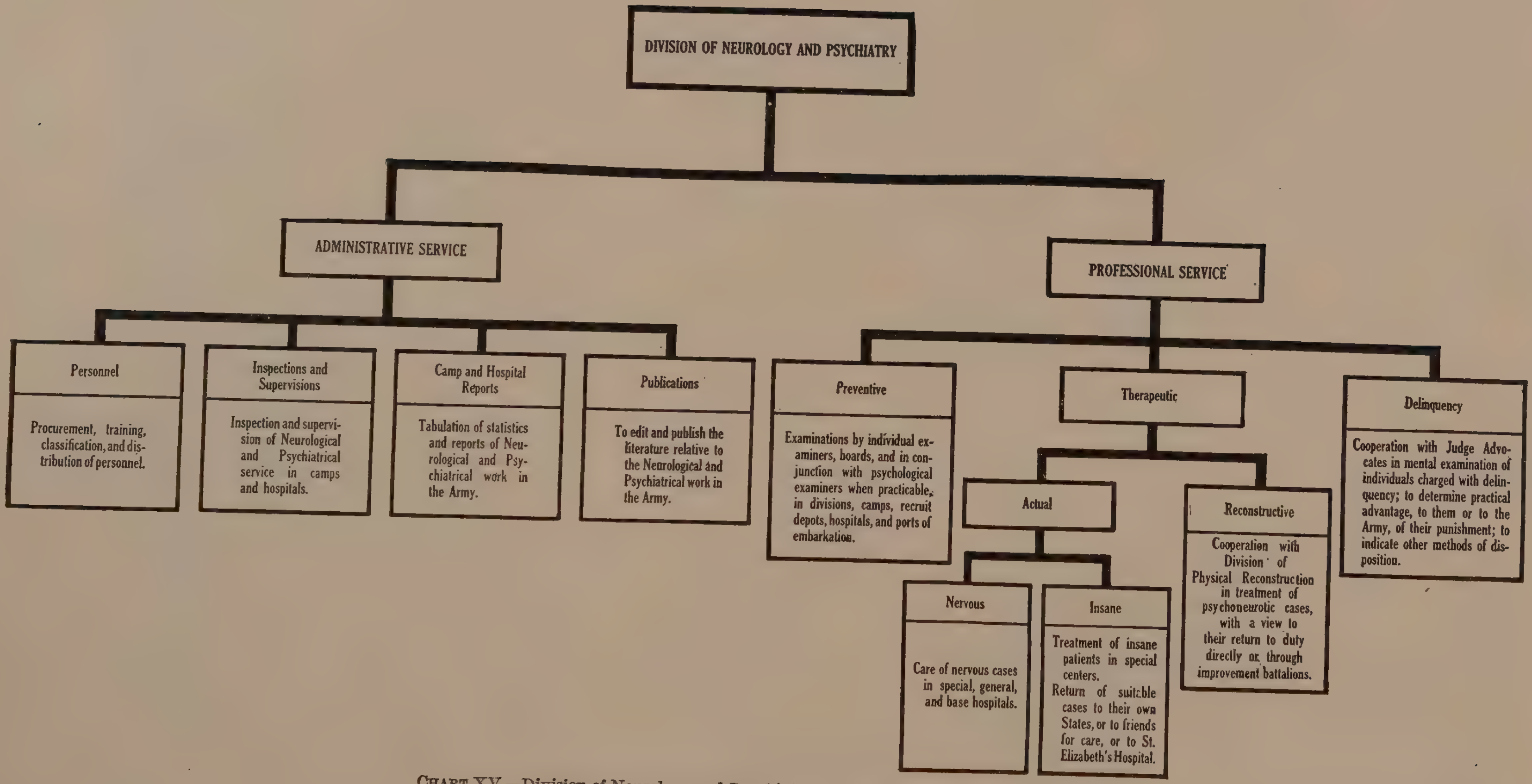
The first activities of the division consisted in classifying and "exempting" for special service the specialists whose applications were coming up daily in great numbers, in deciding upon assignments for them when commissioned, in recommending orders, and in attempting to coordinate its own activities, with those of other branches of the professional services.

With the reorganization of the Surgeon General's Office in the latter part of 1918, the Division of Neurology and Psychiatry ceased to exist as such, and became a section of medicine, under the direction and control of the chief of the Division of Internal Medicine.[6] (See Chart XXIV.)

PERSONNEL.

Four officers were always sufficient to administer the division and it was found possible to spare some of these from time to time to make consultation visits to hospitals and camps.

After the establishment of the Division of Neurology and Psychiatry, the War Work Committee in New York continued to forward applications of candidates for commission, but as the war proceeded the majority of such applications were passed upon directly in the Surgeon General's Office. Some officers who were already commissioned without being exempted for neuropsychiatry obtained special work in the field through their personal applications for transfer from other service; a few, too, requested transfer from neurology and psychiatry to other services. At first, many neurologists and psychiatrists hesitated about applying for commission at all for fear they would be detailed to other duties in the Army than those for which they were exclusively qualified. They were given such assurances as were possible under the circumstances, namely, that they would be used for work for which they were best fitted, and it was only under exceptional circumstances that they were detailed to other activities.



- DIVISION OF NEUROLOGY AND PSYCHIATRY
  - ADMINISTRATIVE SERVICE
    - Personnel: Procurement, training, classification, and distribution of personnel.
    - Inspections and Supervisions: Inspection and supervision of Neurological and Psychiatrical service in camps and hospitals.
    - Camp and Hospital Reports: Tabulation of statistics and reports of Neurological and Psychiatrical work in the Army.
    - Publications: To edit and publish the literature relative to the Neurological and Psychiatrical work in the Army.
  - PROFESSIONAL SERVICE
    - Preventive: Examinations by individual examiners, boards, and in conjunction with psychological examiners when practicable, in divisions, camps, recruit depots, hospitals, and ports of embarkation.
    - Therapeutic
      - Actual
        - Nervous: Care of nervous cases in special, general, and base hospitals.
        - Insane: Treatment of insane patients in special centers. Return of suitable cases to their own States, or to friends for care, or to St. Elizabeth's Hospital.
      - Reconstructive: Cooperation with Division of Physical Reconstruction in treatment of psychoneurotic cases, with a view to their return to duty directly or through improvement battalions.
    - Delinquency: Cooperation with Judge Advocates in mental examination of individuals charged with delinquency; to determine practical advantage, to them or to the Army, of their punishment; to indicate other methods of disposition.

CHART XV.—Division of Neurology and Psychiatry, Surgeon General's Office, June, 1918.

But, as was the case with other professional services, some who showed ability in administration were taken out of professional work for the purpose of acting as adjutants, mess officers, or in other nonprofessional capacity.

At the time of the creation of the division about 50 neuropsychiatric officers had been commissioned. Five months later there were 235, of whom 16 were majors, 71 captains, and 149 lieutenants. At the time of the signing of the armistice there were 430 officers in this country and 263 overseas, making a total of 693. Of these there were 2 colonels, 2 lieutenant colonels, 84 majors, 278 captains, and 307 lieutenants.[7]

At first great care was exercised in regard to the qualifications of physicians seeking commissions for the purpose of doing special neuropsychiatric work and for transfer thereto, for the latter estimates of qualifications were based, in the first place, on the recommendations of superior and commanding officers. When the pressure for specialists of this class became great, especially from France, the strictness in regard to qualifications was relaxed somewhat, and the average in professional excellence underwent a decline.

In general, the officers serving under this division were either psychiatrists or neurologists, although some few had been thoroughly educated in both branches. The psychiatrists were much more numerous and were drawn chiefly from the State hospitals.

The shortage of competent neuropsychiatrists for the Army brought to the attention of the division the marked defects in the educational opportunities for this important specialty. So far as psychiatry was concerned, few facilities had existed anywhere for the proper instruction of undergraduate students. A few clinical lectures were given, but the students were not afforded opportunity of sufficient practical work for these lectures to be of any great advantage to them. There were also few provisions for postgraduate instruction. Practically all the psychiatrists of the country were employees of State hospital systems and received their education through routine performance of their duties. Their experience was largely confined to institutional patients, and they had had little opportunity to observe the border-line cases, which, after all, constituted the real problem of the Army.

In neurology, educational conditions were no better. Practically the only clinical instruction that had been given was on out-patients. Bed services in connection with medical schools were practically unknown, and few hospitals had any bed set aside for neurological cases, and in few hospitals had neurologists ever had any real representation.

The Neurological Institute in New York received many students but had no amphitheater, and the teaching done there, while of high quality, was performed under the greatest difficulty.

The enlisted personnel for nervous and mental cases was made up as far as possible from attendants who had had experience in State hospitals. They were assigned to neurology and psychiatry in some cases by orders, when already enlisted, and in others, by induction into the service, and were sent first, as far as possible, to a training camp. This special class was by no means sufficiently numerous to meet the demands, and was supplemented by men from the Medical Department at large. As few of these had had any special training, they were sent, when possible, for instruction to St. Elizabeths Hospital.

The women nurses were also obtained in large part from State hospitals which had training schools, and became members of the Army Nurse Corps. Special women assistants, termed psychiatric aides,[8] were taken into the Army after a course of training at Smith College.

The almost simultaneous opening of many camps in 1917 created so great a demand for neuropsychiatrists that it was rarely possible to send them to medical officers' training camps for preliminary military training. A few were ordered to these camps, and some officers detailed at these camps were accepted for neuropsychiatric service; but some neuropsychiatrists acquired their military knowledge by the actual performance of duty. It was found desirable, however, to provide additional professional instruction, and this instruction was generally furnished by the directors at special medical institutions at different points, the directors in question being commissioned or serving under contract and receiving the title of military director.[9] The military directors secured the collaboration of many other representative teachers of the vicinity, with the result that the courses provided the best special neuropsychiatric instruction ever given in America.[b] They were scheduled as of six weeks' duration, although not infrequently they were cut short by the pressing need for neuropsychiatric officers in the Army. Even when courses were not actually in progress there were usually some students left on special detail to profit from the usual clinical routine of the institution concerned. The course of study included lectures, clinics, demonstrations, and laboratory work. The fields covered were psychiatry, psychology, personality problems, serology, neurology, neuropathology, with collateral instruction in otology and ophthalmology. The student officers ordered to these schools were on duty status and between two and three hundred of them were given this opportunity of acquiring or perfecting neuropsychiatric knowledge.[10]

Interesting comments were submitted to the Surgeon General by the military directors.[10] From these it appeared that about 20 per cent of student officers could be considered, at the close of the instruction, as qualified in the specialty. The most promising students were neither the very recent graduates nor the oldest men, but those who had been in active work for about 10 years. These latter showed the most energy and initiative and the keenest appreciation of the practical value of the opportunities offered them.

The courses, as a whole, set an example of how neuropsychiatry should be taught and how well it can be taught in this country. The many inquiries on the part of physicians who took the courses, as well as by those who did not, left no doubt as to the practical success attending postgraduate instruction of this kind. At the following places instruction was given:[10] Neurological Institute, New York City; Psychopathic Hospital, Boston, Mass.; Psychopathic Hospital, Ann Arbor, Mich.; St. Elizabeths Hospital, Washington, D. C.; Philadelphia General Hospital, Philadelphia, Pa.; Mendocino State Hospital, Talmage, Calif.; Phipps Clinic, Baltimore, Md.

The first assignments of commissioned personnel were made for the purpose of carrying on neuropsychiatric examinations in the new Army and to supply neurologists and psychiatrists to base and other hospitals. The attempt was also made to examine the National Guard in their armories before they went to the camps, but this was successful in but few instances because of the great confusion which existed in all branches of the service at the time. Examiners were sent later to all recruit depots.

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[b] For full details see volume on Instruction and Training.

Perhaps the most important piece of intensive work done at this time was the examination of candidate officers at the officers' training camps. It was not possible to send examiners to many of the first training camps, which closed August 1, 1917, although excellent pioneer work was done then at Fort Myer. At the second camps valuable service was rendered by specially selected contract surgeons.

In January, 1918, on the recommendation of the Division of Neurology and Psychiatry, the War Department created the position of division psychiatrist, with the rank of major, one for each tactical division.[11] The creation of this office, which was the first recognition in the Army Tables of Organization of the utility of specialists for troops in the field, proved of the utmost importance. These positions were filled as fast as divisions were formed. The official detail of each of these officers was to one of the field hospitals of the division concerned, but they were generally given desks in the office of the division surgeons, from which points they could operate most effectively. Being with and a part of a tactical division, they were able to exercise the preventive side of their specialty to the utmost advantage. It was their duty to keep in touch with the mental health of the command and to familiarize medical officers serving with sanitary troops with neurologic and psychiatric methods. During the training period they were available for all special examining boards, and they asked for the assignment of regimental surgeons to assist in the neuropsychiatric examinations of recruits. They supervised the preparation of special reports to the Surgeon General and saw to it that the recommendations of the neuropsychiatric examiners were promptly prepared for forwarding to general disability boards. They visited the regimental infirmaries and held informal conferences, from time to time, with regimental surgeons and company commanders. They were generally available for consultation and established a satisfactory cooperation with judge advocates, by means of which the mental state of prisoners was established as a factor in their delinquency. Reports of the functioning of these officers overseas indicate that they assisted materially in maintaining the integrity of the commands to which they were attached and expedited the elimination of the unit.[12] Without them the prompt treatment of functional nervous disorders in the hospitals attached to the fighting armies, which practically eliminated "shell shock" as a military problem in our troops, would not have been possible.

As soon as circumstances demanded neuropsychiatric officers were assigned to the office of the surgeons of the ports of embarkation.

By December, 1917, it was realized in the office of the Chief Surgeon, American Expeditionary Forces, that the number of troops then in France, many of whom had sailed before the neuropsychiatric examinations had begun, rendered imperative the services of a director for nervous and mental diseases. Consequently, a neuropsychiatrist was ordered overseas as a casual, with recommendation, which was complied with on his arrival.[13] After that assignments for service with the American Expeditionary Forces became increasingly frequent, being made to overseas base hospitals, evacuation hospitals, special hospital No. 117 for war neuroses, and as casuals and replacements.[14] Some younger officers were assigned to the liaison officer in London for the purpose of studying the methods of management of the war neuroses in the English military hospitals.

In July, 1918, the Chief of the Division of Neurology and Psychiatry was ordered overseas for the purpose of observing methods pursued there. A trip of three months gave him a better understanding of the care, management, and prevention of the nervous and mental casualties of the war, and enabled him on his return to cooperate more successfully with the American Expeditionary Forces.

NEUROSURGICAL SERVICE.

In the winter of 1918–19 officers specially experienced in organic neurology were ordered to certain of the general hospitals with the recommendation to the commanding officer that they be assigned to the surgical service.[15] This recommendation was necessary because organic injuries of the nervous system, although most of them had ceased to be surgical, were treated in the surgical services. That this great mass of neurological material, approximately 5,000 cases, should have been retained under surgical control was not an altogether happy clinical arrangement, from the standpoint of the division, but it was inevitable in view of the circumstances.

The whole question of the proper organization for the care of this class of cases is so important to a modern military medical department that it is discussed here in some detail.

The attitude of the division in the matter will now be explained:

Battle injuries of the nervous system are primarily surgical, being associated not only with open wounds but also with fractures. The best clinical arrangement for this whole class of injuries at the front is in surgical hospitals which are staffed as far as possible with the neurosurgeons and neurologists. If neurosurgeons can not be supplied in sufficient numbers, the cases must be treated at the front by general surgeons. With the healing of the original wound the injury changes its type in the majority of cases. There are some cases which when they reach the hospitals in the zone of the interior still require operation, but these cases are in the great minority. At this stage the spinal-cord injuries are hardly operable, some of the brain cases require secondary operations, and perhaps 15 per cent of the peripheral nerve palsies require surgical interference. But, with these exceptions, after the original wound has healed, the majority have changed their clinical status, and, though primarily surgical, now actually present problems with which a medical officer who is a neurologist by experience and interest is best fitted to deal. Those who have sustained cerebral injuries have been left irritable and subject to various symptoms, which makes personality study necessary before they can be readjusted to civil life; and the cases of peripheral nerve injuries which give promise of spontaneous repair require exact diagnosis and treatment.

Thus, at the close of the surgical wound period, injuries of the nervous system become, as a class, neurological cases. But a change in the specialist in charge of this class of cases would have been difficult to recognize administratively. It was not done in the British medical service and it would have been impossible under the organization which obtained in our Medical Department. The original plan as devised in the Surgeon General's Office was that all these cases would be cared for in the United States in one or more special hospitals, under the Brain Section of the Division of Head Surgery.[16] But when these cases began to be returned in so much greater numbers than had been anticipated, it was found that the provisions for their care in the special hospitals established for the purpose at Cape May and Colonia, N. J., were inadequate both as to the number of beds and as to qualified personnel. And, in addition, it was found that civil interests demanded a wider distribution than had been provided for. These patients, like most others, wanted to be somewhere near their homes. It accordingly became necessary to increase the hospitals designated for their special care. More than a dozen, geographically well separated, general hospitals were therefore designated for patients of this class on their arrival from overseas, the choice of the particular hospital being made with reference to nearness to the patient's home.[16] The Division of Head Surgery, having so many of its officers overseas, could not expand its personnel to meet this situation, and as there was no special neurological service in the hospital organization of the Medical Department, the patients automatically fell to the Division of General Surgery, to which were assigned such neurologists and neurosurgeons as were available.

CONSULTANTS.

No authority was vested in the officers of this division, except on occasions of special detail, to make inspections, as all inspection duties were performed by officers of the Division of Sanitation, Surgeon General's Office (q. v.). Certain special inspections were actually made by members of this division, however; these were classed as consultations in reference to professional work. Some of the professional divisions of the Surgeon General's Office appointed officers known as consultants, who were assigned to different geographical regions for the purpose of consulting therein.[17] This plan was not adopted by the Division of Neuropsychiatry for the reason that it was always possible to secure War Department orders designating an individual officer as a consultant, and it was deemed wiser and less expensive to use different officers for this purpose as the occasions arose. For example, when an officer assigned to some particular post developed a particularly successful system of treatment or management of patients or for making examinations, permission for his temporary relief was obtained from his commanding officer, and he was sent to posts in his neighborhood to consult with neuropsychiatric officers there, in order that they might benefit by whatever he had to tell them. Contract surgeons also were appointed for consulting purposes when they had special knowledge that would prove useful to neuropsychiatric officers on duty in their neighborhood. Practically all the officers detailed to this division, Surgeon General's Office, were ordered from time to time to make trips embracing special hospitals or camps for the purpose of ascertaining whether a more or less uniform and standard of performance of duty was being maintained. Consultations in California were made by a member of the staff of Mendocino State Hospital.[18] This method of consultation in professional matters proved highly successful. Visits from outside officers to officers working at another point invariably resulted in an increase of local interest, in the removal of any obstacles that may have existed, and in raising the standard of professional work.

REPORTS AND STATISTICS.

In order to secure uniformity in the reporting of neurological and psychiatrical cases, the specialists of the division were required to submit their reports on Forms 89, 90, and 91, Medical Department, which were especially prepared for the purpose.[19] These forms were devised and the system of reporting the cases was installed by the statistician of the New York Hospital Commission, who was loaned to the Surgeon General by the New York State Hospital Commission.

Form 89 gave the record of the neurological and psychiatrical examination, and contained instructions which, if followed in sequence, should have insured a systematic clinical history with all observations recorded in a uniform form and order. Form 90, the statistical data card, supplemented the medical history with statistical information of great social value. The data recorded on this form proved most useful for wide application, because the form was prepared so that nothing more than the underscoring or the writing of a few words was necessary for recording the data. Each officer concerned first submitted to the division a form which he had filled in; this was corrected and returned to him—a provision which insured the accuracy and uniformity regarding the data. Form 91, embodying a monthly summary of the work at the particular station, accompanied the monthly report which was required.

Mimeographic instructions relative to the preparation of the forms were mailed to each officer concerned at his first post of duty.[20] They embodied a classification of the nervous and mental diseases, each case reported to be placed with appropriate specific designation under one of the general heads.

The special forms were returned to the Division of Neurology and Psychiatry through the camp surgeons, commanding officers of base hospitals, and post and department surgeons, as the case might be. They embraced camps, cantonment base hospitals, recruit depots, disciplinary barracks, general and post hospitals, and aviation fields. All reports of cases were filed temporarily in the office of the Division of Neurology and Psychiatry in alphabetical order.

The records of the cases (Form 89) were of immediate practical assistance to the medical officers on duty in the office of the Surgeon General in rendering opinions on special cases which were constantly being referred for comment by The Adjutant General of the Army, the Bureau of War Risk Insurance, and by Members of Congress. They further made it possible for The Adjutant General to furnish the States with information concerning the nervous and mental conditions of rejected recruits and discharged soldiers who required State care; an opportunity of which many States availed themselves.

In most instances the information recorded on the special forms was more definite and complete than that contained in the general medical records of the War Department. It will doubtless prove, in the future, of assistance in the detection of fraudulent claims against the Government and in settling controversies arising from disputed diagnoses.

In addition to the medical and statistical importance of the records which have now been explained in detail, they enabled the division to keep in close contact with the work being done in the field and to arrive at conclusions and form opinions as to the quality and amount of work done by officers there. The character of the reports and the promptness and manner in which they were rendered the division assisted in computing the ratings which formed the basis of promotion for these officers. It might seem at first that these forms, which were supplemental to those which were still required by the War Department, would have been regarded as an additional burden and would have been made out unwillingly. Such, however, was not the case. The officers concerned seldom complained of having to render Forms 89 and 90; on the contrary, many expressed satisfaction at thus being kept in professional touch with the central agency particularly interested in their work. The special forms also showed the division where the services of specialists were most needed; this was useful information, as the demand for services of this character always exceeded the supply.

Assistance was rendered the division in the examination of its various statistical data by the National Research Council, which furnished the services of a doctor for this purpose. Information of general value resulted from his researches, especially as concerns the statistical usefulness of clinical histories of the type collected. For example, he ascertained how difficult it was to assure the compliance of examiners with instructions as outlined in Form 89 and how rare it was for examiners to make complete examinations. He arranged a group of 76 examiners, which contained 16 majors and 25 captains, and of this group only one-third could be considered as having made and recorded satisfactory examinations. The others failed to follow the order of the instructions and left many points untouched. This led to the conclusion by the division that statistically clinical histories made under the plan allotted are of value only when they have been rigidly supervised and continuously checked up during the making, something that it was impossible to do with the large numbers involved. They otherwise would represent such an inchoate mass of incomplete and poorly assorted material as to be not worth the effort and expense involved in having them studied by experts. It was actually found that it would take an expert two years merely to read the histories recorded on Form 89, whereas the information on Form 90 was invariable and not only could be recorded rapidly but also could be rapidly reduced to statistical form.

PERSONNEL.[b]

(April, 1917, to December, 1919.)

Bailey, Pearce, Col., M. C., chief.
Woodson, T. D., Lieut. Col., M. C., chief.
Williams, Frankwood E., Maj., M. C., chief.

Salmon, Thomas W., Col., M. C.
Brown, Sanger, II, Lieut. Col., M. C.
King, Edgar, Lieut. Col., M. C.
Adler, Herman, Maj., M. C.

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[b] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Hutchings, Richard H., Maj., M. C.
Boring, E. G., Capt., S. C.
Haber, Roy, Capt., S. C.
Kinney, Kenneth W., Capt., M. C.
Sandy, W. C., Capt., M. C.
Pollock, H. M., First Lieut., S. C.

REFERENCES.

(1) Correspondence. On file, Record Room, S. G. O., 169005 and 183231 (Old Files).

(2) Letter from the Surgeon General of the Army to the National Committee for Mental Hygiene, June 11, 1917. Subject: Applications of Psychiatrists for the Reserve Corps. On file, Record Room, S. G. O., 169005 (Old Files).

(3) S. O. No. 166, W. D., July 19, 1917, par. 137. Annual Report of the Surgeon General of the Army, 1919, Vol. II, 1079.

(4) Correspondence. On file, Record Room, S. G. O., 198175 (Psychiatric Examinations) (Old Files); and 730 (Neuropsychiatry), U. S. Disciplinary Barracks, Fort Leavenworth (N).

(5) Bull, No. 4, W. D., February 7, 1918, par. 5.

(6) Office Order No. 97, S. G. O., November 30, 1918. On file, Record Room, S. G. O., 024.17. (Section of Neuropsychiatry.)

(7) Semiannual report, Division of Neurology and Psychiatry, January 2, 1918. On file, Record Room, S. G. O., Weekly Report File.

(8) Assignment psychiatric aides. On file, Record Room, S. G. O., 231 (Reconstruction Aides).

(9) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1079.

(10) Semiannual report, Division of Neurology and Psychiatry, January 2, 1918. On file, Record Room, S. G. O., Weekly Report File. Correspondence. On file, Record Room, S. G. O., 353 (Training Neuropsychiatrists) (Boston, Mass., New York City, N. Y., Philadelphia, Pa., Baltimore, Md., Washington, D. C., Ann Arbor, Mich., Talmage, Calif.) (F).

(11) Letter from The Adjutant General to the Surgeon General of the Army, January 12, 1918. Subject: Assignment of Neurologists to Tactical Divisions. On file, Record Room, S. G. O., 210.3 (Assignment).

(12) Annual Report of the Surgeon General, United States Army, 1918, 372.

(13) Confidential Order No. 128, W. D., November 22, 1917, detailing Maj. Thomas W. Salmon, M. R. C., to duty overseas. On file Personnel Division, S. G. O. (Personal Report File).

(14) Report of the consultant in psychiatry to the chief surgeon, A. E. F., by Col. Thomas W. Salmon, M. C. On file, Historical Division, S. G. O.

(15) Correspondence. On file, Record Room, S. G. O., 210. 31–1 (Neuropsychiatry) Assignments.

(16. Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1095 and 1096.

(17) Memo. from Brig. Gen. T. C. Lyster to the Surgeon General, August 28, 1918. Subject: Consultants. Approved by the Surgeon General. On file, Record Room, S. G. O., 211 (Consultants).

(18) S. O. No. 214, W. D., October 16, 1917, par. 59, and S. O. No. 58, W. D., March 11, 1918, par. 47, detailing Contract Surg. Robert L. Richards to duty as consultant in Neuropsychiatry.

(19) Form 89, Records of Neurological and Psychiatric Examinations; Form 90, Statistical Data Card; Form 91, Report of Completed Neurological and Psychiatric Examinations. Copies on file, Record Room, S. G. O., 702.3 (Neuropsychiatry).

(20) Instructions to Examiners in Neurology and Psychiatry relative to the Preparation of Statistical Data. On file, Record Room, S. G. O., 702.3 (Neuropsychiatry) 1917.

CHAPTER XV.

DIVISION OF PSYCHOLOGY.

Influenced by their opinion of the possibility of substantially increasing the efficiency of our armed forces during the war through the application of mental measurements to the practical problems of classification and placement, American psychologists promptly organized a committee to prepare methods of testing the intelligence of the soldier.[1] This particular committee (there were several other committees engaged in the study of psychological aspects of military problems) was enabled to proceed with its work because of the support of the American Psychological Association, the Committee on Provision for the Feeble-Minded, Philadelphia, the training school at Vineland, N. J., the National Committee for Mental Hygiene, and the National Research Council.

For several weeks during the summer of 1917 the group of seven men constituting the committee worked continuously on the development of methods suitable for the examination of men in large groups. In July tentative methods were ready for trial. In August they were tried out unofficially in the Army and Navy, with the cooperation of commanding officers.[2] On the basis of favorable results obtained in this preliminary trial, the methods were recommended to the Surgeon General of the Army for practical use.[3] They were accepted promptly for official trial, and the chairman of the committee which had prepared them was commissioned in the Sanitary Corps and assigned to the duty of organizing the service of psychological examining for the immediate purpose of demonstrating what significance it might have for the Army.[4]

The aims to be achieved by the practical use of mental measurement were thus originally stated for the information of the Surgeon General:

> Whereas the Council of the American Psychological Association is convinced that, in the present emergency, American psychologists can substantially serve the Government under the Medical Corps of the Army and Navy by examining recruits with respect especially to intellectual deficiency, psychopathic tendencies, nervous instability, and inadequate self-control, it has voted to present to the proper military authorities the following plan and suggestions for psychological service.
>
> This is not intended as a reflection on the work of the military medical examiner, but instead as an offer of special professional aid in a time of unusual strain, pressure, and haste. Psychologically incompetent recruits are peculiarly dangerous risks with respect to disaster in action, incapacity, and subsequent pension claims. For this reason, and because few medical examiners are trained in the use of modern methods of psychological examining, our profession should be of extreme value to the Medical Corps.

During September, 1917, arrangements were perfected for the psychological examining of drafted men in four National Army Camps. The work was organized under the administrative supervision of the Chief of the Division of Neurology and Psychiatry and was continued by the Section of Psychology of the Division of Neurology and Psychiatry. This administrative relation continued until the organization of the Division of Psychology in January, 1918.[5] (See Chart XVI.)

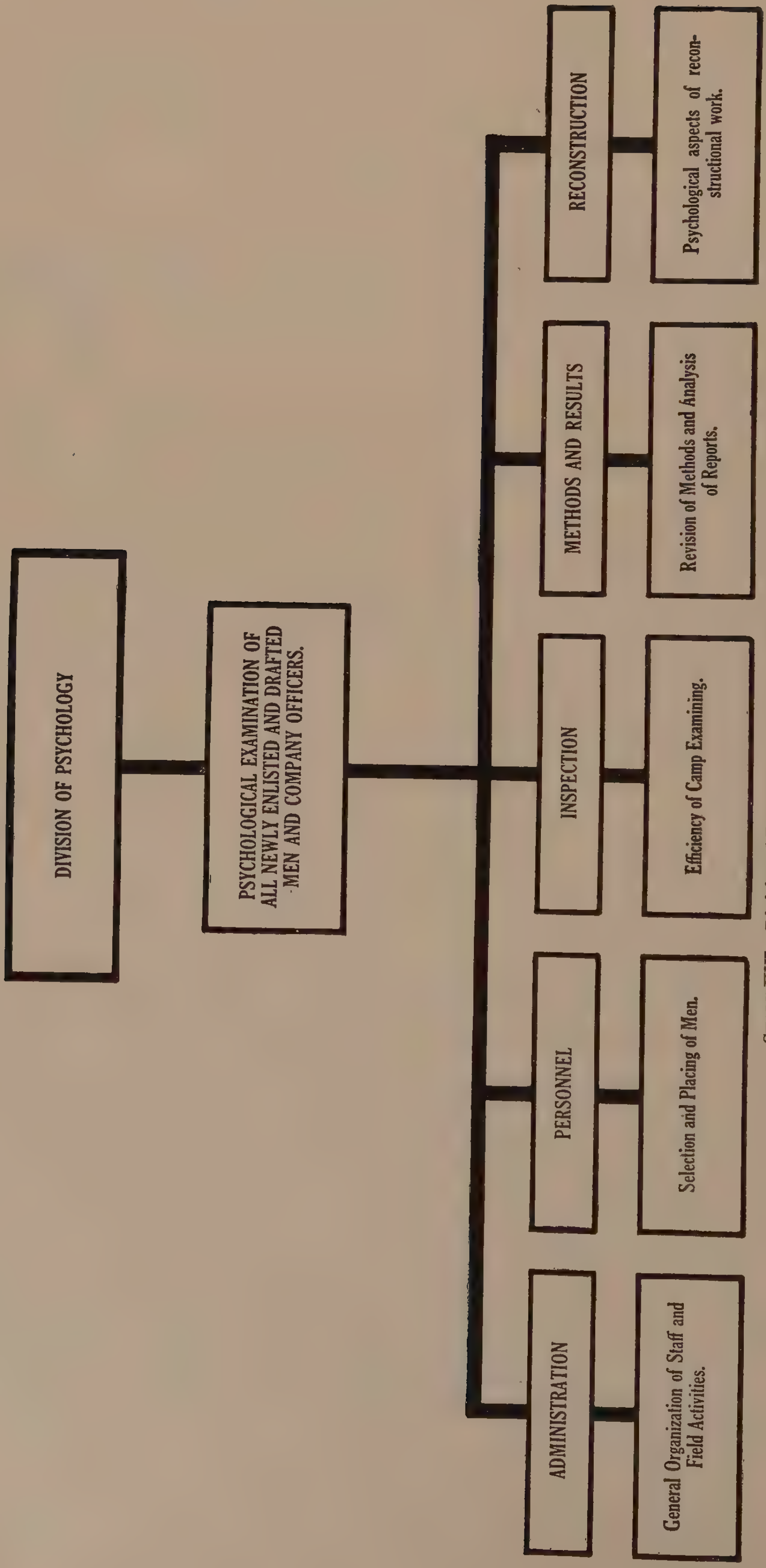
DIVISION OF PSYCHOLOGY
PSYCHOLOGICAL EXAMINATION OF ALL NEWLY ENLISTED AND DRAFTED MEN AND COMPANY OFFICERS.
ADMINISTRATION
General Organization of Staff and Field Activities.
PERSONNEL
Selection and Placing of Men.
INSPECTION
Efficiency of Camp Examining.
METHODS AND RESULTS
Revision of Methods and Analysis of Reports.
RECONSTRUCTION
Psychological aspects of reconstructional work.

CHART XVI.—Division of Psychology, Surgeon General's Office, June, 1918.

The necessary trained personnel for initial psychological work was secured by the appointment of 24 psychologists, under the civil service, to work temporarily as psychological examiners in designated camps. At the same time, 16 psychologists were appointed in the Sanitary Corps to serve in the camps. The psychological staff of each camp originally consisted of four officers of the Sanitary Corps and six civilians.

For the purpose of securing an adequate basis for decision concerning the future of psychological examining, the Surgeon General ordered official inspection of the work in Camp Lee and Camp Devens.[6] The report of this inspection contains the following recommendations:[7]

> In view of the successful results of the psychological examinations at Camp Lee (later confirmed by observations at Camp Devens, and elsewhere) and of the high opinions of the value of the tests by all unprejudiced observers, including the commanding general, the chief of staff, the ranking medical officers, and many company officers, I recommend that the scheme be extended to include all enlisted drafted men and all newly appointed officers, provided competent psychologists can be found to take charge.
>
> In my opinion, the work should be prosecuted under the direction of the division surgeon, inasmuch as the Medical Department is vitally interested in the prompt identification and elimination of the mentally unfit.

During October and November, 1917, approximately 60,000 men were given psychological examination in Camps Lee, Devens, Dix, and Taylor. The work was conducted in the main under extremely disadvantageous conditions.

Following the favorable report of the inspector of psychological examining and the presentation of additional data by the Chief of the Division of psychology, the Surgeon General, on December 7, 1917, recommended the continuation of this service and the extension of examining to "all company officers, all candidates for officers' training camps, and all drafted and enlisted men." The recommendation of the Surgeon General was approved by the War Department on December 24, 1917,[8] and it was requested that he submit a plan to secure the services of the psychologists necessary to put the system of psychological examination into effect for the entire Army. In compliance with this request a detailed plan was prepared and, on January 3, 1918, transmitted to The Adjutant General by the Surgeon General. This plan provided:[9]

> 1. For the appointment of 132 officers in the Sanitary Corps, and 124 noncommissioned officers and 620 enlisted men in the Medical Department for psychological service.
> 2. For the proper training of this personnel through the establishment of a School for Military Psychology at the Medical Officers' Training Camp, Fort Oglethorpe, Ga.
> 3. For the housing of psychological examining in the several camps by the construction of a special building.
> 4. For the manufacture and distribution of all materials of examination necessary for the proper conduct of the work.

The plan was carefully studied by individuals and committees of the General Staff. In the course of the investigation of values instituted by the General Staff, opinions of company officers were obtained. They proved to be approximately 80 per cent favorable.[8] The plan was favorably reported to the Chief of Staff, and on January 19, 1918, was formally approved by the War Department, with the following indorsement to the Surgeon General:[5]

> With the information that in accordance with directions given him under date of December 24, 1917, he is hereby authorized to establish in his office a Division of Psychology for the purpose of making psychological examination of all company officers and candidate officers in officers' training camps, and also of all the newly drafted and enlisted men. The commissioned personnel for this service will be secured by recommending for commission in the Sanitary Corps selected men skilled in psychology. Where possible, men over the draft age will be recommended, but authority is hereby granted also to recommend men within the draft age, provided a sufficient number can not be secured over the draft age.
>
> The enlisted personnel will be secured in accordance with section 150 of the Selective Service Regulations, providing for the induction into the military service out of order of specially qualified men.
>
> Authority is granted for the establishment of a school for special training in psychology in connection with the Medical Department Training School at Fort Oglethorpe, Ga.
>
> The Quartermaster General will construct the necessary building at each cantonment for the examining board in psychology, and furnish the necessary plain furniture for these buildings, in accordance with plans and specifications submitted by you.

The Division of Psychology, thus specifically authorized by the War Department, was promptly organized, and on January 20 all necessary arrangements were perfected to advance, with the utmost speed, preparations for the extension of psychological examining throughout the Army.

These preparations involved, first, the appointment of an adequate number of competent psychologists; second, the training of these men, and of a large number of assistants, in military drill, as well as in military psychology; third, the revision of methods of examining in the light of preliminary results, and the construction of new methods to meet the needs of the Army; fourth, provision of plans for a psychological building and equipment of same; fifth, designing and arranging for manufacture of all equipment for examining and of the necessary printed materials. In view of the probability that drafted men would have to be examined by the million, everything was necessarily projected on a large scale.

The preparation and revision of methods proceeded steadily and caused no delay whatever in the actual conduct of examinations. Similarly, the School for Military Psychology at Camp Greenleaf, Fort Oglethorpe, Ga., which was opened early in February, 1918, provided adequate opportunities for military and technical psychological training. The examining materials were definitely arranged for and their manufacture expedited, so that early in the spring of 1918 an adequate supply was available. The paragraph of the War Department approval of January 19, 1918,[5] authorizing the Quartermaster General to construct special buildings for psychological examinations in each cantonment later was disapproved by the equipment committee of the General Staff "until such time as funds may be available for this construction by act of Congress."[10] This disapproval was received by the Surgeon General February 14, 1918, but various existing buildings in the camps were assigned for temporary use by psychological examiners. Significant information concerning the status of psychological personnel as compared with the demands of the service is supplied by the accompanying table of personnel.[11]

Personnel, Sanitary Corps, Medical Department, Division of Psychology.

	Authorized May 16, 1918.[a]							Recommended by Surgeon General, July 9, 1918.							Total authorized October, 1918.						
	Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieutenants.	Second lieutenants.	Total.	Colonels.	Lieutenant colonels.	Majors.	Captains	First lieutenants	Second lieutenants.	Total	Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieutenants.	Second lieutenants.	Total.
Reconstruction hospitals	....	....	....	....	4	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Medical Officers' Training Camp (Camp Greenleaf)	....	....	1	1	....	....	2	....	....	1	1	2	....	4	....	....	1	3	....	....	4
Camps, National Army and National Guard	....	....	....	14	53	....	67	....	....	16	30	35	31	112	....	....	14	27	31	28	100
Depots and psychiatric stations	....	....	....	....	....	....	....	....	....	1	10	5	....	16	....	....	....	....	....	....	....
Surgeon General's Office	....	....	2	1	1	....	4	1	1	2	1	....	....	5	....	1	2	1	....	....	4
Total	....	....	3	16	58	....	77	1	1	20	42	42	31	137	....	1	17	31	31	28	108
Total heretofore authorized	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	17	57	....	77
Increase recommended October, 1918	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	14	14	26	28	31

[a] The War Department on January 19, 1918, had authorized the appointment of 132 officers in the Sanitary Corps for psychological service. On May 16, 1918, a committee of the General Staff limited the number to 77.

Three relatively independent official investigations of psychological examining were instituted by the War Department during the spring of 1918 before the extension of the work had been accomplished. The net outcome of the investigations was the justification and support of the plan of psychological examining, and, finally, the preparation of instructions for the conduct of examining. These instructions were issued by the War Department [12] August 14, 1918.

In spite of the fact that the Division of Psychology was compelled, through the disapproval of the construction of special buildings and through failure to appoint an adequate number of officers, to postpone the organization of its work in many of the divisional training camps, this work, nevertheless, steadily gained in favor and in value to the Army. By October, 1918, practically all of the active training centers were partially provided with personnel and equipment for psychological examining.

The efficient organization of psychological examining in a large training camp was an administrative undertaking of considerable magnitude and difficulty. The chief psychological examiner was held responsible for the following important tasks: (*a*) The organization of an adequate and efficient staff; (*b*) the training of a reliable clerical force of strength required by the camp; (*c*) arrangements for suitable space and equipment for conduct of examinations; (*d*) arrangement of schedules of examining and for system of reporting results; (*e*) establishment of profitable cooperative relations between the psychological staff and the personnel adjutant, the headquarters staff, medical officers, and the commanding officers of the principal camp organizations; (*f*) familiarizing officers of the camp or division with the nature and use of intelligence grades and with the possible values of psychological service to organizations; (*g*) organization of methods of classifying, filing, and storing data of examinations; (*h*) the discovery and development of new lines of service and the maintenance of a state of preparedness to respond to all reasonable requests for special help.

The following general scheme of staff organization was put into effect as a result of inspection of camp conditions: (1) Chief psychological examiner, responsible for general administration, correspondence, and camp contacts; (2) clinical psychologist, responsible for direction of individual examining, neuropsychiatric contacts, and the study of the success of low-grade men; (3) first assistant psychological examiner, responsible for direction of group examining, oversight of psychological building, scoring of examination papers, and handling of records; (4) second assistant psychological examiner, responsible for psychological service to development battalions and relations of the psychological staff to such organizations; (5) third assistant psychological examiner, responsible for personnel office relations, uses of intelligence ratings, and special assignments.[13]

It was the expectation of psychological examiners that their principal service would be assistance in the prompt discovery of mental defectives and in suggesting their proper disposition. Long before the official trial of methods of psychological examining had ended, however, it had become clear that various other applications were desired by officers of the line and that the significance of the psychological service would unquestionably be much broader than had been supposed. The official medical inspector of this work listed its purposes as: (*a*) To aid in segregating and eliminating the mentally incompetent; (*b*) to classify men according to their mental capacity; (*c*) to assist in selecting competent men for responsible positions.[13]

With the extension of psychological examining, these three lines of application rapidly became differentiated, and both line and medical officers discovered, for themselves or with the assistance of psychological examiners, new and important ways of utilizing mental ratings to increase military efficiency and to lessen the cost of military training and maintenance. The principal practical uses of intelligence grades common to the majority of the training camps in which the psychological service was organized are specified below:[8]

> (1) For the discovery of men whose superior intelligence warranted their consideration for promotion, special training, or assignment to positions of unusual responsibility or difficulty; (2) for assistance in selecting suitable candidates for officers' training schools, noncommissioned officers' training schools, and other special training organizations; (3) for the guidance of personnel adjutants in the assignments of recruits, so that organizations might be built in accordance with desirable intelligence specifications or, in the absence of such specifications, so that their different constituent parts, such, for example, as the companies of a regiment, should possess approximately the same mental strength, thus avoiding the risk of weak links in the Army chain; (4) for the prompt discovery of men whose low-grade intelligence or mental peculiarities rendered them of uncertain value in the Army, and the assignment of such individuals to development battalions for observation and preliminary training; (5) for the discovery and recommendation for assignment to labor battalions of men obviously so inferior mentally as to be unsuitable for regular military training, yet promising serviceableness in simple manual labor; (6) for the discovery of men whose mental inferiority unfitted them for any sort of military duty and whose rejection or discharge should therefore be recommended to medical officers; (7) for utilization in connection with the organization of special training groups so that each group might be instructed or drilled in accordance with its mental capacity, thus avoiding the delay incident to dull or awkward individuals and enabling the especially able men to proceed rapidly and ultimately to take special forms of training in preparation for promotion or other forms of responsibility.

The methods originally recommended to the Surgeon General of the Army consisted of, first, a procedure for examining men in groups of 100 or thereabouts; second, of a series of tests recommended for use in the examination of individuals whose grade in the group examination was unsatisfactory. It was originally assumed that somewhere about 90 per cent of drafted men might reasonably be expected to take the group examination, which required ability to read and write English. The initial trial showed that this was a gross overestimation and that from 20 per cent to 30 per cent of the men reporting to training camps, including negroes, were unable to do justice to their intelligence because of illiteracy in English.[14] This large proportion of illiterates compelled the Division of Psychology to devise a special method for examining illiterates in groups.

Following the probationary period and in preparation for extension of the work to the entire Army, the following revisions and modifications of method were effected:[15]

1. For the examination of men who could read and write English a group examination, designated as examination alpha, which consisted of eight different tests of intelligence, was constructed by revision of the initial group examination.
2. For the examination of native-born illiterates or foreigners illiterate in English a group examination, known as beta, was prepared. This required neither reading nor writing and was in effect the translation of alpha into pantomime or gesture language. The men were shown by actual demonstration what they were expected to do.
3. For the examination of individuals who for one reason or another failed to make satisfactory grades in alpha or beta three types of individual examination were made available:
    (*a*) For individuals with a fair degree of literacy either the Stanford-Binet examination or the point scale examination.
    (*b*) For individuals who were totally illiterate a performance examination was especially devised by Army psychologists.

Examination alpha was used with groups of men varying from 50 to 500. It was common for examiners to take an entire company at one time, or a half company in case the examining room was not large enough to accommodate the whole. Somewhat smaller groups were usual for examination beta, chiefly because not more than one-third of the men reporting for examination as a rule required this particular type of examination. The several forms of individual examination proved eminently satisfactory and the performance scale which was devised by Army psychologists was a valuable contribution to available methods of examining illiterates. The original group examination for literates, prepared under great pressure by a small group of psychologists, and gradually perfected in the light of Army use, proved to be by far the best assemblage of intelligence tests for practical purposes that had yet been arranged.

Despite all handicaps, or perhaps partially because of them, the psychological service was finally organized in 35 training camps, and between September, 1917, and January 31, 1919, 1,726,966 men were examined. Of this number 42,238 were officers.[16]

From April 28, 1918, to January 31, 1919, a period for which camp reports are reasonably complete and reliable, 7,800 men (0.5 per cent) were reported for discharge by psychological examiners because of mental inferiority. For the same period the recommendations for assignment to labor battalions because of low-grade intelligence numbered 10,014 (0.5 per cent); for assignment to development battalions in order that they might be carefully observed and given preliminary training to discover if possible ways of using them in the Army 9,487 men (0.6 per cent) were recommended.[17]

In a few instances men whose mental age was as low as four years were accepted by the draft boards and sent to the training camps. For somewhat higher grades of intelligence the numbers are large; thus, for the period referred to about 4,780 men with mental age below 7 years were reported by psychological examiners; 7,875 between 7 and 8 years; 14,814 between 8 and 9 years; 18,878 between 9 and 10 years. This gives a total of 46,347 men whose mental age was less than 10 years.[17]

The following general table[18] indicates at once the number of drafted men examined in the several training camps; the proportion of negroes; the percentage of individuals (fourth column) who were given the group examination for illiterates; the proportion who were given indivual examination because of unsatisfactory showing in the group examinations; the percentages for the several camps for mental ages below 7, 8, and 9, respectively; the proportion recommended for discharge; and, finally, in the last column, the proportion considered by the psychological examiners unfit because of intellectual inferiority for regular military service. This table covers examinations from May, 1918, to January, 1919. It presents the results for a grand total of 1,556,011.

Camp.	Number of men examined.[a]	Negro.	Beta (total).	Individuals examined.	Below 7 years.	Below 8 years.	Below 9 years.	Recommended for discharge.	Unfit for regular military service.
Beauregard	2,375	0.1	60.5	1.1	....	0.04	0.17	0.29	0.3
Bowie	27,339	10.8	32.9	4.5	0.25	.82	1.78	.80	2.2
Cody	42,533	....	17.5	1.2	.07	.32	.60	.14	.5
Custer	54,284	9.9	36.3	3.7	.17	.37	.76	.21	.9
Devens	48,978	1.7	30.8	5.9	.09	.39	1.15	.64	1.5
Dix	67,766	19.8	35.7	4.5	.16	.48	1.74	.16	.7
Dodge	68,019	26.1	35.7	6.8	.15	.50	1.43	.27	1.3
Fremont	3,165	....	....	24.0	.63	3.03	7.77	1.33	16.5
Funston	75,677	25.5	32.2	3.3	.65	1.47	2.52	.60	2.6
Gordon	62,859	10.9	31.1	4.7	.43	.96	1.75	.92	2.1
Grant	81,341	19.3	32.8	4.3	.58	1.24	2.16	.95	2.4
Greene	27,331	39.3	45.3	3.3	.08	.40	1.38	.11	.3
Greenleaf	50,011	.9	23.8	4.4	.27	.68	1.42	.87	1.9
Hancock	44,052	5.2	32.0	5.0	.30	.98	1.97	.77	2.2
Humphreys	13,192	....	28.6	3.3	.18	.75	1.60	.06	1.1
Jackson	95,954	18.1	22.6	6.6	.19	.72	1.87	.16	2.8
Kearny	18,510	.01	19.3	2.4	.03	.24	.63	.22	1.4
Lee	82,071	8.9	30.8	3.7	.36	.93	1.77	1.08	1.4
Lewis	73,636	2.2	27.0	3.6	.28	.68	1.31	.42	1.6
Logan	19,310	.3	22.7	1.7	.06	.27	.54	.09	.5
McArthur	17,010	6.7	31.4	.02	.01	.01	.01	....	....
McClellan	6,566	.5	23.7	.7	.06	.20	.32	.49	.6
Meade	64,045	21.3	41.6	6.3	.58	1.30	2.47	.09	.9
Pike	74,041	16.5	35.9	7.7	.16	.62	1.84	.96	2.3
Sevier	24,130	18.7	34.8	9.7	.74	2.01	4.42	.63	4.3
Shelby	6,080	....	16.8	1.1	.07	.10	.21	.26	.5
Sheridan	53,818	10.3	26.0	3.9	.42	1.01	1.77	.50	1.3
Sherman	62,968	31.1	44.1	4.4	.46	.99	1.89	.73	1.3
Stuart	118	.9	....	42.4	.85	.85	1.69	12.71	22.0
Taylor	53,262	16.9	23.2	4.4	.78	1.77	2.35	.36	.6
Travis	76,530	22.3	35.3	9.7	.11	.49	2.33	.18	2.9
Upton	61,008	15.6	27.8	6.1	.27	.80	1.99	.68	2.1
Wadsworth	65,490	6.3	24.0	7.0	.24	.73	1.82	.23	1.3
Wheeler	32,299	11.1	25.9	7.1	.19	.42	1.15	.37	3.1
Special examinations	603	....	5.1	....	....	....	....	....	....
Total	1,556,011	14.3	31.1	5.1	.31	.81	1.77	.50	1.8

[a] For all columns except this the figures are per cents of men examined, including officers.

A general summary of examining which indicates the proportions of enlisted men and officers, of whites and blacks, and the grand totals of each, follows:[17]

	White.	Colored.	Totals Apr. 28, 1918 to Jan. 31, 1919.	Totals September, 1917, to Jan. 31, 1919.
Enlisted	1,328,305	221,550	1,556,011	1,684,728
Officers	32,694	199	32,893	42,238
	....	....	1,588,904	1,726,966

Although the psychological personnel gathered abundant and varied evidence of the practical value of pyschological examination in the Army, the final appraisal should come from the Army itself. It is therefore appropriate to present a statistical summary of the opinions of the commanding officers.

On completion of the official trial of methods of psychological examining in four camps somewhat more than 80 per cent of the regimental and company commanders who were acquainted with intelligence grades and their proposed applications expressed their approval of this new line of work and the opinion that it should be continued, extended, and its military usefulness increased.

Subsequently, and after the service had been reasonably well organized and was intimately known in some 30 training camps, the commanding officers of the camps were requested by the Surgeon General [19] to state their opinions concerning the value of the results in their respective camps or organizations and to suggest ways of improving the service. Thirty responses to this request were received. Of these, 27 were favorable. This is approximately 90 per cent, and, inasmuch as the report of the commanding general, as a rule, is based upon the opinions and evidences of value presented by his subordinates, it is reasonable to assume that this figure safely indicates the increase as compared with the former 80 per cent favorable in the proportion of favorable judgments for the established as contrasted with the probationary or trial period.

By the time of the signing of the armistice, November 11, 1918, the psychological service, except for unsatisfactory housing of the work in many of the camps, inadequate officer personnel, and inadequate rank of that personnel, was in very satisfactory condition, and it was foreseen, if the war had continued, that a 20 per cent increase in the officer personnel would have rendered possible the examining of drafted men as fast as they entered the training camps.

With the armistice, the number of examinations rapidly lessened, so it was possible immediately to formulate plans for the examination and analysis of materials in order to make an official report concerning the psychological service. This was rendered reasonably easy through the regular weekly reports which had been submitted to the Division of Psychology by the chief psychological examiner of each camp, but in order to supplement the statistical information thus supplied it was arranged by the Division of Psychology to use the Hollerith system for the analysis of a random sample of intelligence grades. This sample as originally arranged for amounted to approximately 10 per cent of the total number of psychological examinations made after the initial methods had been thoroughly revised and approved.

The Division of Psychology rendered numerous services aside from psychological examining in military training camps. Chief among these special services were the following: Cooperation with the Division of Military Aeronautics, the Intelligence Division, the Office of The Adjutant General of the Army (especially with the Committee on Classification of Personnel of the Army), the Quartermaster Corps, and various civil and military Government bureaus and other organizations in and about Washington. Similarly, in the camps themselves numerous special services were demanded which tended to increase familiarity with intelligence grades both within and without the Army, and to stimulate a demand from education and industry for the application of Army methods of psychological examining or suitable substitutes. Arrangements were made by cooperation of the Division of Psychology with the authorities of the Students' Army Training Corps for the application of the Army group examination for literates to all students of that corps. This program was not carried out because of the interruption of this work by the armistice.

In April, 1919, the Surgeon General was requested by the War Department to prepare simple methods of psychological examination for illiterates and non-English-speaking citizens and aliens.[21] This was done by the Section of Psychology. In the fall of 1919 the methods were put into use in the various recruit stations.[22]

The Psychological Service of the Medical Department of the Army was continued under the administrative direction of Section of Psychology, Hospital Division.[23]

For reasons stated elsewhere (see Preface), the full account of psychological examining in the United States Army was published as Memoirs No. XV, of the National Academy of Sciences.[21]

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Bingham, H. C., Maj., S. C., chief.
Yerkes, R. M., Maj., S. C., chief.

Berry, C. S., Maj., S. C.
Foster, Wm. S., Maj., S. C.
Terman, L. M., Maj., S. C.
Yoakum, C. S., Maj., S. C.
Boring, E. G., Capt., S. C.
Elliott, R. M., Capt., S. C.
Hunter, W. S., Capt., S. C.
Myers, G. C., Capt., S. C.
Paterson, Donald G., Capt., S. C.
Richmond, H. A., Capt., S. C.
Baxter, C. C., First Lieut., S. C.
Lincoln, E. A., First Lieut., S. C.
Mertz, Paul A., First Lieut., S. C.
Metcalf, John T., First Lieut., S. C.
Otis, Arthur S., First Lieut., S. C.

REFERENCES.

(1) Yerkes, Robert M.: Psychology in Relation to the War. *The Psychological Review*, New York and London, 1918, xxv, No. 2.
(2) Examination of recruits, psychological methods. On file, Record Room, S. G. O., 188389 (Old Files).

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

(3) Plan for Psychological Military Service, July 16, 1917. Robert M. Yerkes, Maj., S. C., United States Army. On file, Record Room, S. G. O., 702.

(4) S. O., No. 196, par. 83, W. D., August 23, 1917.

(5) Fifth indorsement, W. D., Adjutant General's Office to the Surgeon General, United States Army, January 19, 1918. On file, Record Room, S. G. O., 702 (Psychological).

(6) Letter from the Surgeon General to the Chief of Staff, August 21, 1917; third indorsement, September 4, 1917, from the Surgeon General to The Adjutant General. On file, Record Room, S. G. O., 195852 (Old Files); 702 (Camp Lee Psychological Examinations).

(7) Camp Lee inspection reports. On file, Record Room, S. G. O., 702.

(8) Letter from the Surgeon General of the Army to The Adjutant General, December 7, 1917. Subject: Continuance Psychological Work. Attached thereto, memo. for Chief of Staff from director of training, General Staff, December, 1917. Subject: Opinions of Psychological Examiners. On file, Record Room, S. G. O., 720.4 (Psychological Exam.), 1917.

(9) Third indorsement from the Surgeon General to The Adjutant General, January 3, 1918. Subject: Plan for Psychological Examining. On file, Record Room, S. G. O., 702.4 (Psychological).

(10) War Department Cantonment Division to the Surgeon General of the Army, February 14, 1918. On file, Record Room, S. G. O., 652 (Psychological).

(11) Table "G I," Personnel Sanitary Corps, Division of Psychology. On file, Record Room, S. G. O., 024 (Division of Psychology).

(12) G. O., No. 74, par. 7, W. D., August 14, 1918.

(13) Staff organization, plan for psychological examining in the Army, March 5, 1918. On file, Record Room, S. G. O., 024 (Division of Psychology).

(14) Annual Report of the Surgeon General, United States Army, 1919. Vol. II, 1077.

(15) Letter from the Surgeon General, United States Army, to the Chief of Staff, January 4, 1919. Subject: Significance of Psychological Examinations for Military Uses. On file, Record Room, S. G. O., 702 (Psychology).

(16) Weekly report, Section of Psychology, February 13, 1919. On file, S. G. O., Weekly Report File.

(17) Psychological statistics. On file, Record Room, S. G. O., Weelky Report File.

(18) Compiled from monthly reports of psychological examinations. On file, Record Room, S. G. O., 024-10 (Psychology).

(19) Correspondence. On file, Record Room, S. G. O., 024 (Division of Psychology).

(20) Letter from The Adjutant General to the Surgeon General, United States Army, April 19, 1919. Subject: Psychological Examination of Illiterates and Non-English-Speaking Citizens and Aliens. On file, Record Room, S. G. O., 342.1 (General).

(21) Memoirs of the National Academy of Sciences, Vol. XV. Psychological Examination in the United States Army. Part I. History and Organization of Psychological Examining and the Materials of Examination. Part II. Methods of Examining, History, and Development, Preliminary Results. Part III. Measurements of Intelligence in the United States Army. (Government Printing Office, Washington, 1921.)

(22) Correspondence on file, Record Room, S. G. O., 702 (Recruiting Services).

(23) Office Order, No. 777, S. G. O., September 9, 1919.

CHAPTER XVI.

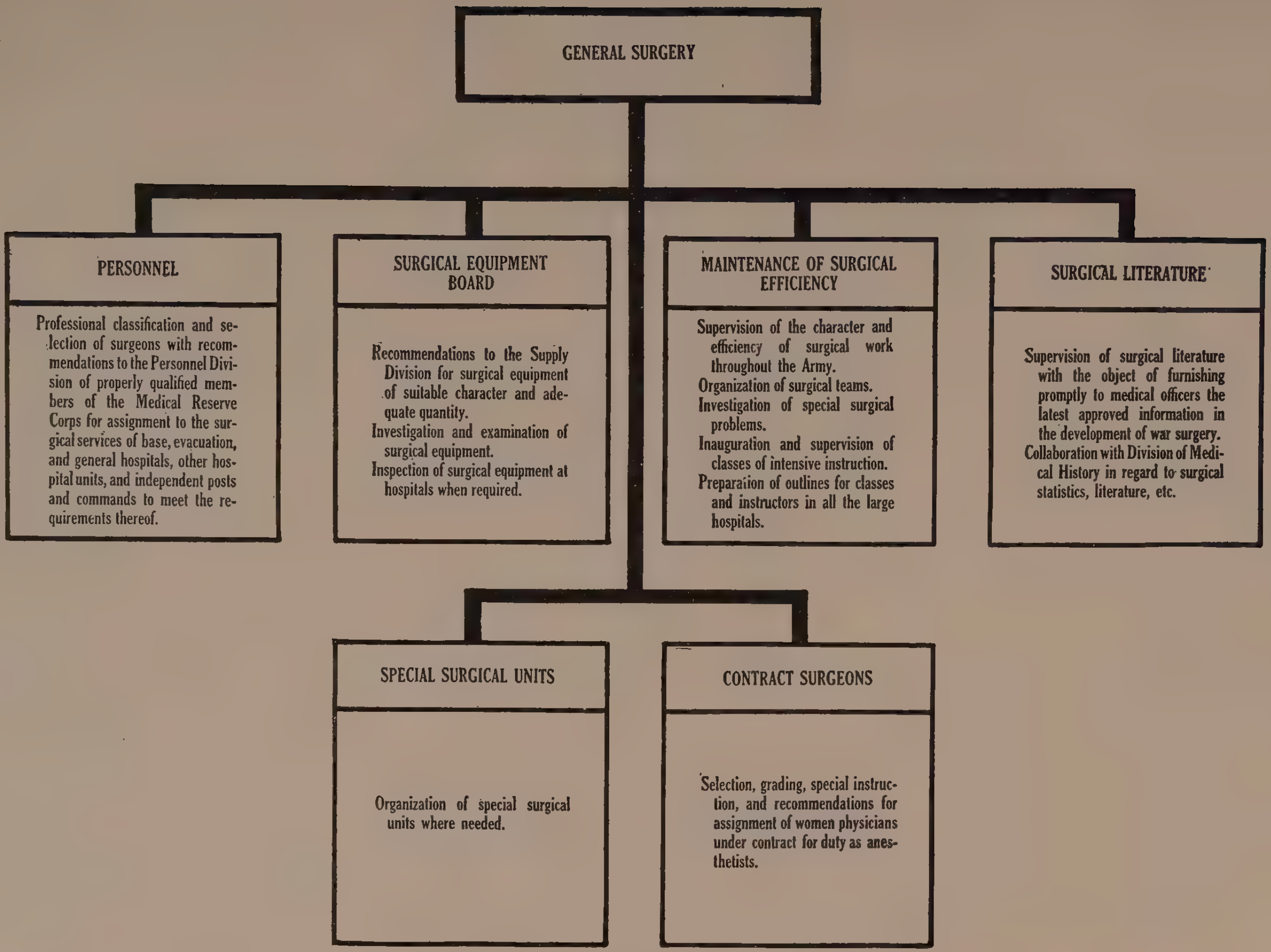
DIVISION OF GENERAL SURGERY.

ORGANIZATION.

The expansion crisis created by the declaration of war necessitated unprecedented activity on the part of the Office of the Surgeon General. From the purely clinical side, these activities radiated very naturally along the lines mapped out by the Manual for the Medical Department, from the three centers of medicine, surgery, and laboratories.[1] Early in the movement wise and insistent attention was centered on the rôle of the medical specialties and of the necessity of specialization in the Medical Department of the Army as refined as that in civil life. With the sympathetic interest and support of the Council of National Defense, the Surgeon General developed, in the field of surgery, the formation of units or sections devoted to surgery of the brain; surgery of the eye; surgery of the ear, nose, and throat; orthopedic surgery; and oral and plastic surgery. In order to organize and correlate the facilities of general surgery, represented by the Division of General Surgery (see Chart XVII), the Surgeon General requested a civilian surgeon to act as adviser to him in regard to general surgery and all the surgical specialties, and to select such men as he deemed suitable to serve as associates.[2]

On July 9, 1917, the duties of this adviser were taken up in the Office of the Surgeon General.[3] After consultation with the Surgeon General and chiefs of divisions of the Surgeon General's Office, a small group of surgeons was appointed for this work, the men being selected, as far as possible, from the South and West, as the States east of the Allegheny Mountains were already represented in the Surgeon General's Office. It was decided to make the term in office only two weeks for the first rotation.[3] This enabled the Surgeon General to choose the men who showed the greatest fitness for the work, and gave them an opportunity, during their first short term of office, to think over their problems so that their second term could be made longer and more efficient. It was not the intention that this advisory board should have distinct duties, but were to take up special problems as they presented themselves for investigation, and report to the Surgeon General.

It became daily more apparent that the painfully won experience of civil hospital organization must be reckoned with, and that the broadest and least hampered growth of the specialists rested upon their fundamental coordination of them with the mother subjects. As a result of the failure to appreciate this fact, the special branches of orthopedic and head surgery (including ophthalmology, otolaryngology, brain surgery, and plastic and oral surgery), under enthusiastic and efficient guidance, developed along lines independent of general surgery and equal in standing, so that general surgery no longer repre-



GENERAL SURGERY

PERSONNEL

Professional classification and selection of surgeons with recommendations to the Personnel Division of properly qualified members of the Medical Reserve Corps for assignment to the surgical services of base, evacuation, and general hospitals, other hospital units, and independent posts and commands to meet the requirements thereof.

SURGICAL EQUIPMENT BOARD

Recommendations to the Supply Division for surgical equipment of suitable character and adequate quantity.

Investigation and examination of surgical equipment.

Inspection of surgical equipment at hospitals when required.

MAINTENANCE OF SURGICAL EFFICIENCY

Supervision of the character and efficiency of surgical work throughout the Army.

Organization of surgical teams.

Investigation of special surgical problems.

Inauguration and supervision of classes of intensive instruction.

Preparation of outlines for classes and instructors in all the large hospitals.

SURGICAL LITERATURE

Supervision of surgical literature with the object of furnishing promptly to medical officers the latest approved information in the development of war surgery.

Collaboration with Division of Medical History in regard to surgical statistics, literature, etc.

SPECIAL SURGICAL UNITS

Organization of special surgical units where needed.

CONTRACT SURGEONS

Selection, grading, special instruction, and recommendations for assignment of women physicians under contract for duty as anesthetists.

CHART XVII.—Division of General Surgery, Surgeon General's Office, June, 1918.

sented a team, with suitable players, in the various fields, but a league of teams essentially competitive.

This spirit of rivalry, while quite friendly, had a disorganizing tendency. It was quickly seen, from the standpoint of the injured soldier, that this would lead to inefficiency and disorder, twofold in significance. In the first place, it was mirrored in the almost total lack of organization in the office of the Division of General Surgery; and in the second place, it manifested itself for a time in the various base hospitals, where each of the eight constituted specialties worked under its own chief of service and without any chief or interdepartmental coordinating authority.[4]

The necessary corrective forces were applied through the joint efforts of the Surgical Advisory Board and the Division of General Surgery. The changes instituted were based on the two fundamental considerations: (1) That the existing state of confusion necessitated the immediate institution of steps to reorganize the Division of General Surgery, so as to make it an efficient, directing center; (2) that caution should be practiced, lest, in reorganizing the division, efforts should be centered exclusively on the activities of general surgery, thus tending to create an added spirit of rivalry or competition instead of one of coordination and cooperation between general surgery and the surgical specialties.

On November 8, 1917, after numerous consultations with the surgical advisers, the Chief of the Division of General Surgery, the Chief of the Hospital Division, and the chiefs of the divisions representing the various specialties, the Surgeon General issued an order to the commanding officers of base and general hospitals providing for three services—medicine, surgery, and laboratories.[5] This order further provided that the surgical service should include the special sections of general surgery, urology, orthopedic surgery, head surgery, and roentgenology. In the Office of the Surgeon General, the contemplated organization of activities, along lines similar to those laid down in the above instructions, was not completed until a year later.

All the essentials for practical, efficient, and cooperative organization, however, were not settled, so that the surgical adviser and the Chief of the Division of Surgery were prepared to arrange and dispose of detailed problems.

CLASSIFICATION OF SURGICAL PERSONNEL.

Of these problems, the most serious and urgent was that of properly classifying the men available for surgical duty. Prior to this time surgical chiefs had been selected for the various cantonment hospitals by methods that were not only impractical, but also were sure to prove unsatisfactory and totally inadequate in securing proper personnel for the various military hospitals soon to be established.

In September, 1917, a medical officer was also placed in charge of the classification and assignment of surgical personnel of hospitals, and he immediately set about to cooperate in the classification and selection of personnel. The plan finally worked out was to group the men under one of four heads in accordance with the following scheme:[6]

(A) Available for detail as clinical chief, field hospital, evacuation hospital, base hospital, special hospital, consultant.

Not available for detail because of (1) teaching, (2) civil hospital position, (3) dependents,

(4) physical disqualifications, (5) assigned to active duty elsewhere, (6) on Red Cross base hospital unit.

(B) Available for detail as first assistant to clinical chief, field hospital, evacuation hospital, base hospital, special hospital.

Not available because of (same as under class A).

(C) Available for detail (1) on staff of hospital in class B, (2) as regimental surgeon after appropriate military training.

Not available because of (same as class A).

(D) Available for detail (1) on staff of hospitals in class B, (2) on duty in any capacity or special duty with Medical Corps.

Not available because of (same as class A).

QUALIFICATIONS—FOUR CLASSES.

(A) Chief in large civilian hospital; known proficiency as an organizer and administrator and instructor.

(B) First assistant in large clinic, capable of assuming chief's duties. Ability known to committee or ascertained to be satisfactory.

(C) Experience that of chief of out-patient department; second assistant in clinic; general practitioner doing surgery.

(D) Experience that of hospital interne, minor dispensary position, etc.

(1) Men assigned to classes (A) and (B) only when their qualifications are known to this office.

(2) Men in all classes will have their specialties noted on card.

(3) Special summary card will be made for each man, being a confidential expression of committee's findings from his record or from personal knowledge of committee members or data from this office.

The perfection of the plan necessitated inquiry into the records of hundreds of men in the various base, general, and post hospitals, followed by certain reassignments in order to reorganize the personnel with properly qualified men, where this was necessary. In selecting this type of personnel, only those men were picked for service overseas who were less than 45 years of age, and therefore most likely to be able to meet the severe test of long hours of work.

Hand in hand with the classification and selection of men for the base, general, and post hospitals, the personnel was selected for a number of evacuation hospitals in process of organization.

INSTRUCTION.

Late in July, 1917, arrangements were completed whereby medical officers were enabled to receive intensive surgical instruction.[7] At the Rockefeller Institute, beginning August 1, 1917, the principles of wound healing and the treatment of wounds were demonstrated to classes of approximately 15 men over a period of two weeks for each class. These classes of intensive instruction were made up of officers of the Medical Reserve Corps assigned to active duty who had had surgical training and were destined for future general surgical activity. In addition to the course at Rockefeller Institute, other courses covering traumatic surgery and fractures were given at the following places: Bellevue Hospital, New York; Boston City Hospital, Massachusetts General Hospital, Boston; University of Pennsylvania, Philadelphia; Charity Hospital, New Orleans, La.; Pittsburgh, Pa.; Roosevelt Hospital, New York; Lakeside Hospital, Cleveland, Ohio; Presbyterian Hospital, Chicago; Mayo Clinic, Rochester, Minn. These courses, which were started early in November, 1917, averaged about 10 men, except the one at Rochester, Minn., where an average of 30 men attended, and each course lasted approximately a month. By the 1st of December the officer organization was running smoothly and by the end of December the classification of surgeons was practically complete.

PLAN OF ORGANIZATION AND ACTIVITIES OF THE DIVISION OF GENERAL SURGERY.

The beginning of the year 1918 saw the Division of General Surgery running along plans so well matured that it was possible, in answer to a formal request from the General Staff on February 8 to submit the following plan of organization and activities:[8]

1. FUNCTION.

The Division of General Surgery classifies surgeons of the Medical Reserve Corps according to professional capacity and trains those who are not fully qualified to a state of higher medical efficiency. The fully qualified men as well as those mentioned above are intensively trained in standardized military operative surgery. Surgical instruments and equipment are likewise standardized on the basis of simple efficiency. The properly graded and trained men are appropriately assigned, and the distribution of the instruments and supplies is recommended by this division.

2. ORGANIZATION.

(A) IN WASHINGTON.

1. Chief, lieutenant colonel, Medical Corps.

2. Rotating advisory staff composed of eight surgeons of outstanding reputation; all majors, M. R. C. (one on duty all the time).

3. Assistant to chief and advisers. To act for either in case of absence (Department of Personnel), major, M. R. C.

4. Department of surgical instruments and equipment. Function: Standardization and recommendation concerning purchase of all surgical appliances and supplies; major, M. R. C., lieutenant, Sanitary Corps, N. A.; sergeant, first class, Medical Department, U. S Army.

5. Department of Personnel. Functions:

(*a*) Classification of all officers of Medical Reserve Corps on basis of surgical ability. Accomplished by:

(1) Study of application papers.

(2) Confidential information from outside sources.

(3) Monthly reports from commanding officer of each base, general and cantonment base hospital.

(4) Efficiency report on each officer attending various classes of intensive instruction.

(5) Personal inspection by chief or an assistant major, M. R. C.; lieutenant, S. C., N. A.

(6) Department of educational, editorial, and literary supervision; functions:

(*a*) Standardization of curriculum of various classes of instruction.

(*b*) Compilation of abstracts of all important surgical publications from August, 1914, to the present. These have been bound and forwarded to the directors of classes in war surgery, to all important military hospitals in the United States and Europe, and will be kept up to date by a similar monthly publication.

(*c*) Selection and manufacture of suitable moving-picture films and lantern slides for instruments of medical officers in cantonments and training camps; two majors, M. R. S.

(B) OUTSIDE OF WASHINGTON.

1. School for wound healing and modern antiseptic treatment of wounds (Rockefeller Institute).

2. Schools for intensive training in war surgery and fractures, held in large clinical centers, one or more, in New York, Boston, Pittsburgh, Cleveland, New Orleans, and Rochester, Minn. (Mayo clinic).

3. Continuation of clinical instruction in cantonment, base hospitals under direction of chief of surgical service and qualified assistants.

4. Selection, assignment, and maintenance of an efficient surgical service in United States Army base, general, cantonment base hospitals in this country. Accomplished by monthly reports of qualifications of personnel and of surgical operations performed. Inspection of equipment and surgical activities by chief of this division or an assistant when indicated.

5. Selection and assignment of surgical personnel for evacuation and base hospitals for duty overseas.

6. Under the direction of the Division of General Surgery, Base Hospital No. 116 has been organized and is now ready for overseas service.

7. A mobile operating unit intended to furnish the best operative facilities for service cases near the front is now being organized by this division.

(c) OVERSEAS.

1. Two directors of general surgical activities in France.

3. Statistical Data.

More than 6,000 Medical Reserve officers have been classified as doing 10 per cent or more surgery in civil life. The Division of General Surgery has given courses of intensive training to 594 medical officers. The Division of General Surgery has at present:

466 surgeons on duty at base and general hospitals in United States Army.
360 surgeons on duty at medical officers' training camps for military training.
138 surgeons on duty in classes of intensive instruction.
145 surgeons on duty in evacuation and base hospitals now mobilized for overseas.

Later in the course of the year, 1918, after the division had been working in accordance with the plan outlined above, it was possible to catalogue the organization and activities in greater detail. This detail was furnished in a report to the Surgeon General by the chief of division in part, as follows:[8]

DIVISION OF SURGERY.

Function.—The Division of Surgery is a professional division charged with the consideration of all matters relating to surgery.

1. *Personnel.*—Recommendations to the Personnel Division of properly qualified members of the Medical Reserve Corps for the assignment to the surgical services of base, evacuation, and general hospitals, other hospitals, units, and independent posts and commands, to meet the requirements thereof.

2. *Surgical equipment board.*—Recommendations to the Supply Division for surgical equipment of suitable character and adequate quantity.

3. *Maintenance of surgical efficiency.*—(*a*) The inauguration and supervision of classes of intensive instruction for selected officers of the Medical Reserve Corps.

(*b*) Supervision in a broad general way of the character and efficiency of surgical work done throughout the Army. The organization of surgical teams and the investigation of special surgical problems as they arise.

(*c*) The preparation of outlines for classes of intensive instruction at clinical centers and for use of instructors in all the large hospitals.

(*d*) The supervision of surgical literature with the object of furnishing promptly to medical officers the latest approved information with regard to the development of war surgery and other surgical problems which are presented to the camps and cantonments.

Collaboration with the Division of Medical History with regard to surgical statistics, literature, etc., with relation to history of war.

The selection, grading, and providing for special instructions; and the recommendation for assignment of women physicians under contract for duty as anesthetists.

THE ORGANIZATION OF SPECIAL SURGICAL UNITS.

Chief of division.—All activities of the various officers are coordinated and controlled by the chief. All memoranda and reports are viséed by him.

PERSONNEL.

Officer charged with:

1. Assistant to and understudy for chief of division. Also assists and advises with surgical adviser to the Surgeon General (Major Mayo).

2. Selection of officers for detail to intensive courses for further training.

3. Classification of surgeons according to professional capacity and previous training.

4. Based on this classification, the selection of officers for surgical work in all organizations, e. g., base, evacuation, general hospitals, other hospital units and independent posts and commands, to meet the requirements thereof. Providing the adequate number of officers with proper qualifications for duties as chiefs of service, assistants, operating surgeons, and ward surgeons, etc. Assembling surgical teams in groups for service overseas.

Assisted by officer charged with office detail of:

1. Requests to Personnel Division for all orders for assignment of officers held by Surgical Division to active duty, to medical officers' training camps, to base and other hospitals, and elsewhere, when required.

2. Request for orders of officers to classes of intensive instruction at New York, Chicago, Philadelphia, New Orleans, San Francisco, and Rochester, Minn.

3. *Correspondence for division chief.*—(*a*) With the commanding officers of base and general hospitals regarding nominations for availability of officers for classes of intensive instruction and transfer to other stations to meet the need thereof.

(*b*) Notification of commanding officers of hospitals with regard to professional qualifications of officers assigned or to be assigned.

4. *Classification.*—(*a*) Assisting Major Sullivan in properly classifying officers; retaining them for the Division of Surgery, including the following up of each case awaiting commission; and requesting orders for assignment to active duty when and where needed.

5. *Efficiency reports.*—(*a*) Reviewing and recording efficiency reports of all medical officers in the surgical service, rendered monthly by the commanding officers of the different hospitals, noting their qualifications and adaptability, and requesting orders for transfer of officers reported as unfit for base hospital duty.

(*b*) Reviewing and recording the efficiency reports from classes of intensive instruction on the student medical officers in attendance.

6. *Records.*—(*a*) "Master index" of all officers assigned to the Division of Surgery, showing name, home address, age, rank, classification, changes of status, professional efficiency, adaptability, etc.

(*b*) "Training camp file": Cards for all officers undergoing training at medical officers' training camps, noting reports of efficiency and availability for other assignment upon completion of military training; cross-checking with records at training camp and correspondence relating thereto.

(*c*) "Suspense file" of cards for officers in process of being commissioned, candidates and applicants for commission who are qualified as surgeons, and are desired for assignment by the Division of Surgery.

(*d*) "Special file" for cards showing name records, orders of all officers assigned to surgical service in all cantonments, general and post hospitals, also hospital organizations for overseas service.

(*e*) "Special instruction file" of cards for officers who have been and are being ordered to classes of intensive instruction.

7. *Miscellaneous.*—Following up of special cases and conditions that arise in the administration of the division which pertain to the personnel of the Division of Surgery.

SURGICAL EQUIPMENT BOARD.

Officer charged with:

1. Investigation and examination of surgical equipment, and standardization of instruments and appliances, based on the practical efficiency and needs of the service; the consideration and modification of equipment with regard to type, quality, and quantity, to meet needs of surgical service; and the preparation of proper recommendations to the Supply Division.

2. Inspection of surgical equipment at hospitals when required.

Assistant charged with:

1. Care of surgical instruments, appliances, etc., submitted for examination.

2. Records of reports of surgical equipment submitted to hospitals for trial.

3. Proper distribution of surgical bulletins, pamphlets, reviews, and reports.

MAINTENANCE OF SURGICAL EFFICIENCY.

Officer charged with:

1. The inauguration and supervision of classes of intensive instruction in war surgery and fractures, the treatment of infected wounds by the Carrel-Dakin method, and the instruction in the administration of anesthetics.

2. The supervision of the character and efficiency of surgical work done throughout the Army by the inauguration of monthly reports covering detail of surgical operations, and supplemental reports as to death, infection of clean wounds following operation, of patent errors in surgical services, and the checking up of the surgical technique of teams. (Assisted by Captain Davison.)

3. Inspection of surgical staffs at hospitals; supervision of organization of surgical teams and investigations and consultation with regard to special surgical problems as they arise.

Officer charged with:

1. The preparation of outlines for classes of intensive instruction for clinical centers and for use of instruction in all the large hospitals.

2. The supervision of surgical literature with the object of furnishing promptly to the medical officers the latest approved information with regard to the development of war surgery and other surgical problems which are presented in the camps and cantonments.

3. Cooperation with the Division of Medical History.

4. Review of original articles in surgery submitted for publication by officers of the Medical Department with the rendition of necessary recommendation to the Publication Board.

Officer charged with:

1. Assistant to chief of division as advisor to the Medical Reserve officers on duty in division in military procedure, correspondence, Army regulations, and orders.

2. Assistant to Surgical Equipment Board in consideration of changes of and addition to standard Army equipment.

3. Checking, reviewing, and tabulating reports of surgical operations of all hospitals, including report of deaths on surgical service, infection in clean wounds, etc.; comparing records of surgical staffs, standardizing the form and manner of surgical reports; formulation of instruction to chiefs of surgical staffs (through the commanding officers in hospitals) relative thereto.

SPECIAL SURGICAL UNITS.

Special surgical units organized by specific authority: Base Hospital No. 116, special fracture hospital, mobilized for duty with the A. E. F. on December 20, 1917.

By a system of card cataloguing, it was made possible properly to select officers for their professional training in war surgery, to classify them according to their professional capacity, and to place them in the various surgical positions established in all of the hospitals of the country. In addition, surgical teams were recommended to the Personnel Division for overseas duty.

SURGICAL EQUIPMENT.

The Surgical Equipment Board on June 1, 1918, submitted a report in part as follows:

1. As soon as practicable after the organization of the Division of General Surgery, the Surgical Equipment Board was organized, the express purpose of which was to "investigate and examine surgical equipment, standardize instruments and appliances, based on the practical efficiency and needs of the service, the consideration and modification of equipment with regard to type, quality, and quantity, to meet the needs of the surgical service."

* * * * * * *

4. Because of our considerable dependence on other countries for high-grade surgical instruments, the attempt to provide them from our own manufacturing resources to meet the urgent and immediate demands was extremely difficult.

5. Through the activities of the committee on standardization appointed by the Council of National Defense in May, 1917, a "List of staple medical and surgical supplies" was issued. Several vital requirements governed the selection of this list of instruments. Types that were sufficiently simple to insure quick production and early availability in great quantities were designated. In

many instances these were not the most desirable types, but, being obtainable in minimum time, were accepted to bridge the period of emergency. During the early part of this year the production had increased to such a degree that the process of eliminating undesirable types and substituting more acceptable ones of the standard type has received attention. Standardization of surgical instruments and equipment when practicable or designation of selected types that are available and acceptable has contributed markedly toward rapid production and efficient service.

6. Numerous inspections of base hospitals have unearthed several instances of inferior material and workmanship in parts of the surgical equipment, due, no doubt, to a certain degree, to an attempt to "force" the production as well as to failure on the part of some makers to fulfill the specified requirements. The rate of production at present is making it possible to require a higher standard in all surgical equipment without retarding the activity or efficiency of the hospital services. All suggestions as to improvement and modifications of surgical equipment have been given careful consideration, and whenever practicable have been recommended for adoption. It has not been the policy of this board to recommend instruments or apparatus of untried value or to ignore recommendations or improvements possessing any promise of merit, but by careful investigation, practicable demonstration, and consultation with experts to promote the efficiency of each division of the surgical service, without "clogging" by unnecessary or complicated equipment. This method of investigation and selection has, until recently, been conducted by this office.

7. During April General Order, W. D., April, 1918, was issued, organizing "The Invention Section, General Staff, Army War College," to whom all ideas and inventions of a mechanical, electrical, or chemical nature are to be referred for investigation and action, the Surgeon General's Office being represented on both the Examiner's and Advisory Board.

8. Early in the year the gauze situation became rather acute. In an effort to forestall any serious shortage in our surgical dressings the re-usable knitted gauze was developed. In company with Mr. Henry Pope, a manufacturer of knitted goods, a member of this board entered the knitting mills, and by trying out many types of yarn and fabric succeeded in developing a knitted gauze that can advantageously be substituted for woven gauze, the reclamation of which is difficult.

9. It is tubular in form, lightly woven, knitted cotton, selvaged, of appropriate sizes and shapes, and can be rapidly produced. Careful experiments and practical use justify the assumption that these dressings can be reclaimed several hundred times, making a supply of 100 pounds equal to 10,000 pounds in actual service after the initial supply, thus very materially reducing the cost and releasing transportation space for other things. It has been estimated by a questionnaire that the average amount of woven gauze used and not reclaimed averages 2 miles per week in each base hospital in this country. Re-used knitted gauze is now being supplied to all hospitals in this country of 100 beds or over in the following sizes and types:

(*a*) Gauze packing, approximately 1 by 18 inches.
(*b*) Sponge, approximately 2 by 2 inches.
(*c*) Compress, approximately 4 by 4 inches.
(*d*) Dressing pad, approximately 6 by 8 inches.
(*e*) Absorbent pad, approximately 8 by 12 inches.
(*f*) Absorbent pad, approximately 12 by 24 inches.
(*g*) Abdominal roll, approximately 4 inches by 5 yards.
(*h*) Head net for scalp and mastoid dressings.
(*i*) Head and face mask for operating-room service.
(*j*) Ward mask.

10. A separate laundry unit, providing adequate washing, drying, and forming facilities, has been arranged for at each base hospital, the installation of which and instructions relative to the reclamation of the gauze are under the supervision of a sanitary officer designated by the Supply Division for that purpose.

11. It is believed that in the near future light, portable laundry units can be installed in many overseas and evacuation hospitals, and that, if necessary, front packages can be equipped with this gauze to be reclaimed at the first hospital reached by the wounded.

INSTRUMENTS.

1. In so far as was feasible the cases of instruments, M. M. D., were systematically revised and modernized by additions from the standard list, Blue Book No. 1. By this method surgical instruments and cases already on hand and contracted for were utilized.

2. Specialization of the Division of General Surgery into general, orthopedic, and head surgery necessitated the provision of special instruments, apparatus, and cases for each special section. Among these are the brain, plastic, and oral case, auxiliary eye case, and many special instruments not in cases.

3. Base hospitals, this country, base hospitals and evacuation hospitals, overseas, are equipped according to revised lists to which "Additional articles" have been added. As new instruments, supplies, and equipment are needed, they are regularly authorized and added to this list of initial equipment of base hospitals and evacuation hospitals, respectively.

4. The instrument shortage, at one time a somewhat alarming feature, has continually improved, and at present the Supply Division has the situation in hand.

ANESTHESIA APPARATUS.

1. After careful inspection and practical trial of many types of gas oxygen apparatus, keeping in mind the value of portability and adaptability to conditions likely to be encountered overseas, the following portable improved apparatus were recommended and adopted as acceptable types: Connell, McKesson, Heidbrink, Safety, and Teter. Provision has been made for their issue as rapidly as possible.

2. Through the experiments of the Rockefeller Institute for Medical Research at New York and the surgical and medical staffs of our base hospitals, the value of Dakin's solution in certain infections has been established.

3. In the beginning of the war such a demand for the Carrel-Dakin apparatus for use in this country was not anticipated, but the widespread streptococcic invasion made it imperative to supply a large number of these outfits to base hospitals here. This has been done, and ample provision made for an adequate supply for overseas service as well. All questions as to the proper type of apparatus for administering or manufacturing Dakin's solution have been referred to the Rockefeller Institute for recommendation, and the methods employed at this time are satisfactory.

4. Following the policy of standardizing all apparatus where possible, and conserving transportation space without sacrificing efficiency, a wheeled stretcher carrier, equipped with a metal litter, designed to fit any type of standard field litter, available for either hospital or field service and as an emergency operating table, was devised and developed by Colonel Moncrief, Major Fishleigh, and others in the Office of the Surgeon General. This appears to meet every requirement and will soon be ready for issue.

5. The sterilizing facilities at base hospitals have not proven adequate. Provision has been made to increase them when needed. Where operating pavilions are to be enlarged, an additional sterilizing unit will be installed that pus and clean services may be effectively separated. The Chief of the Laboratory Service in each base hospital has actively cooperated with the Surgical Service in all questions pertaining to sterilization. Imperfections have developed in operating tables at various hospitals. A more durable type that will withstand the severe usage to which they are necessarily subjected has been recommended for immediate issue.

6. The scarcity of suitable drugs for local anesthesia caused some little concern during the recent epidemic of empyema, but novocaine is now available and is supplied where needed. A suitable intratracheal anesthesia apparatus for the head section and general use when indicated has been provided. In answer to a cabled request from the Surgeon General, Ambrine is now being manufactured in this country by an agent of the inventor, and is obtainable in suitable quantities.

7. Orthopedic apparatus and appliances are provided for and their adaptability being gradually enhanced by minor improvements in the efforts to standardize.

8. A more efficient lighting unit for operating rooms is being installed where required.

9. An increased supply of Moncrief dressing sets is being provided to facilitate ward work. The large number of empyema and other primarily infected cases makes it essential to facilitate this daily labor. A reserve supply of all base hospital surgical instrument equipment has been recommended.

10. Where experience has proven the inadequacy of any particular instrument for the type of work that develops in any service, suitable substitutions have been made.

11. Some few shipments of foreign-made instruments, especially hemostats, have been found on inspection to be below the standard. This deficiency is in process of correction.

12. Needles are now available in abundance, and for spinal anesthesia, a flexible, nickeloid type has been substituted. Through the Supply Department provision is being made for a reserve stock of standard instruments, cases, etc., to bridge over any emergency that may arise.

13. The mobile operating unit, now virtually completed and ready for service, has been fully equipped with specially constructed motorized sterilizers, X-ray outfits, and surgical instruments, with a suitable reserve supply for all emergencies.

14. Many other changes, additions, and substitutions of varying importance have been recommended, and it is believed that in so far as is practical the foundation for standardization and adequate provision for a supply of surgical instruments and equipment to meet the needs of the service has been successfully established by the Supply Division.

EMPYEMA COMMISSION.

During the months of December, 1917, and January and February, 1918, many cases of pneumonia were reported from all of the camps in the South. Accompanying this epidemic of pneumonia, so-called, a large number of cases of empyema began to be reported. During an inspection trip through the different camps made by the Chief of the Division of General Surgery, Surgeon General's Office, it was recognized that this epidemic of pneumonia with empyema accompanying constituted a type of general septicemia with tendency to localization in the lungs and pleura; that the invaded organism frequently was in the greater proportion of cases a streptococcus, generally of the hemolytic type. At all of the camps much work had been done in attempting to determine the nature of the infection. The mortality varied from 40 to 60 per cent in those cases in which a large amount of fluid had been in the pleural cavity. The method of treatment in the early stage of the epidemic had been, universally, drainage by the removal of one of the ribs, generally in the mid-axillary line, but in some of the camps repeated aspiration had been attempted. In some of the camps the number of cases showing empyema, so-called, had been considerably over 100.

The large number of cases of empyema which accompanied or followed pneumonia led to the organization of the Empyema Commission.[9] A study of the subject was begun by a commission located at Camp Lee, Va. In addition, local teams were raised by other base hospitals from the attached personnel, consisting of a surgeon, an internist, and a bacteriologist to study local conditions, all information being collected in the Surgeon General's Office and disseminated to the various camps.

As the spring advanced the epidemic spread to the North, and Camps Dodge, Taylor, and Custer became invaded. At Camp Dodge a study of the pathology of the condition was made, and as a result of the investigation the pathological nature of the disease was established.

The commission at Camp Lee soon established the wiser procedure and in streptococcus infection insisted on conservative treatment until the acute pneumonic process had subsided. During this period aspiration was undertaken if the respirations were seriously embarrassed. As soon as the resistance of the patient had been somewhat lowered and the acute pneumonic process had subsided, drainage between the ribs was instituted by means of a flutter valve tube. This being soon withdrawn, it was found that these cases could be healed within three weeks after drainage was instituted. At the Rockefeller Institute, early operation, with the use of Dakin's solution, was followed by considerable primary mortalities owing to the early operative procedure; but the important fact was soon established that in 80 per cent of the cases in from a week to ten days the pleural cavity could be rendered sterile and the wound sutured without subsequent drainage. The general nature of the treatment as instituted at Camp Lee had already been arrived at in a great many of the camps, notably Taylor, Pike, and Lee, so that the principle of conservative treatment in the early stages became firmly established.

At this time the study of the treatment of chronic cases was begun by the Empyema Commission and others, and the Surgeon General's Office began to accumulate these cases in separate centers for intensive study.[a]

SURGICAL SERVICE.

With the beginning of June, 1918, the Division of Surgery was functioning fairly well. The many problems of inherent perplexity gradually found solution, and the spirit of cooperation in the Office of the Surgeon General manifested itself in part in the smoother running of the division. There was a noticeable disjunction between general surgery and the surgical specialties, but later in the year even this was overcome by an office order which made the chief of the Division of General Surgery the administrative officer for all surgery.[10] Not only did this order effect closer coordination but it did this without destroying the initiative of the surgical specialties or in any way making them subsidiary to the mother specialty in a scientific or purely clinical sense.

Early in July, 1918, the main energies of the division were directed toward making a complete detailed survey of the character of surgical work done in all the camps. A system of reports was developed by means of which it was possible to secure very early information regarding unnecessary surgical operations, avoidable wound infections, and unwarrantable deaths. It was possible, as a result of these reports, to institute corrective measures covering these three topics. It was the policy of the division at all times to allow the widest latitude of judgment to all surgical chiefs on all purely surgical matters, but it was necessary, of course, at all times to have a thorough knowledge of the professional and temperamental qualifications of the various chiefs.

A carefully considered and well-worked-out plan for running a standard surgical service was devised, but was never forwarded as an official document, in order to avoid conflict with the normal initiative of the various chiefs. This plan, however, was fully expounded to the various commanding officers and surgical chiefs, who, for one reason or another, came to Washington. Furthermore, the plan of a standardized scheme was always discussed with the various commanding officers and surgical chiefs by the surgical consultants who went from Washington to the camps.

One important element in the scheme of standardization was that of the conservation of supplies. In the early days of haste and primitive organization there was little time or inclination to conserve, but as organization proceeded it was possible to emphasize the idea of rational economy to the point that some of the camps showed a cost per operation of 20 to 30 cents as contrasted with an earlier cost of $2 to $3.[11] The use of knitted re-usable gauze, the reclamation of cotton, alcohol and iodine, the economic use of catgut and adhesive plaster, were all elements in a most pronounced cost reduction.

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[a] See Empyema, Vol. XI, Part Two. Section I.

CONSULTANTS.

By August, 1918, a comprehensive system of consultation tours was inaugurated. This system was planned after mature consideration and after a formal and extended conference held at Washington with three enthusiastic surgical chiefs, who had been called in from the field, and who presented their views before the Acting Surgeon General and the Division of Surgery. The consultants were assigned groups of camps in geographic relations and were instructed to cover all possible topics pertaining to every phase of surgery. Each consultant on his return to his station submitted a report covering his consultation and always appended a special estimate of the professional qualifications of the surgical personnel of the various camps visited.[12] On the basis of these reports measures were instituted to strengthen the service whereever necessary.

SURGICAL LITERATURE.

Another important factor in the maintenance af surgical efficiency during the last year of the war was the distribution of surgical literature. The activity of the Division of Surgery along this line took on a very definite form, and adhered throughout to the policy of avoiding the academic and practicing only the most utilitarian methods. It was realized that the exigencies of the situation left little time for extensive or intensive reading. Therefore a carefully prepared digest of all important American, English, French, Italian, and German (when procurable) contributions to surgery was published in a 50 to 60 page monthly *Review of War Surgery and Medicine* [13] and sent to the camps in this country and overseas. In addition to this, there was prepared for distribution a Manual of Surgical Anatomy,[14] which was a volume made up of 400 anatomical plates without text, but with clear legends and a full explanatory index. The drawings were selected solely from the point of view of their use in war surgery. In September, 1918, after correspondence with the British war office, the Surgeon General published 20,000 copies of the British Official Manual of the Injuries and Diseases of War,[15] and arranged for a wide distribution of this almost invaluable treatise. At about this same time their was delivered from the press, Abstracts of War Surgery,[16] a book of four hundred and odd pages, furnishing abstracts, topically arranged, of all the important surgical articles published by the Allies from the declaration of war up to the time of American participation. During September, 1918, arrangements were completed for publishing, in pamphlet form, the conclusions adopted by the four interallied conferences on war surgery. These pamphlets, unfortunately, were not ready for distribution until after the armistice.

All the above-detailed literary activity of the Division of Surgery had a dual purpose. In the first place, the aim was to maintain a high degree of professional efficiency in the active medical corps, and, in the second place, it was the purpose of the division to see that the various publications should serve as fundamental texts in surgery for the Students' Army Training Corps (Medical Section). The signing of the armistice nullified the latter purpose.

LIAISON WITH OVERSEAS SURGICAL SERVICE.

During August, 1918, the chief consultant, surgery, American Expeditionary Forces, returned from France for conference with the Surgeon General and the Chief of the Division of General Surgery. These conferences represented the first real liaison between the American home and overseas divisions and were productive of much real benefit. For example, it was learned that properly qualified anesthetists were in urgent demand. Within eight weeks the Surgeon General had established 15 or 20 special schools for anesthesia in the various camps.[17] By hearty cooperation with the Interstate and the American Associations of Anesthetists it was found possible to place several of the leading anesthetists of civil life as directors of these schools, and in very short order the Surgeon General was prepared to send overseas monthly from 15 to 30 specially trained anesthetists (officers, nurses, and enlisted men). The training received by these pupils was confined to the drop ether, gas-oxygen, gas-oxygen-ether methods.

With the completion of this program of anesthesia the Division of Surgery felt that it was in full command and had adequate control of all the fundamental factors necessary in the training of medical officers. Intensive thought and direction had been given to the Medical Officers' Training School, Camp Greenleaf, Fort Oglethorpe, Ga., and the various other schools established at an earlier date were kept under careful survey. The surgical activities in the various camps, although varying markedly from real war surgery, nevertheless furnished adequate material for the comprehensive training of surgeons along many important lines.

STATISTICS.

The following statistical report, compiled by the Division of Surgery, gives an idea of the volume of surgical work of 32 base hospitals.[18] From this report it may be seen that it was possible for the various officers connected with the Surgical Service to receive intensive training in the fundamental principles of surgery, as well as in their application:

	April.	May.	June.	July.	August.	September.
Average number occupied beds (daily)	33,154	30,732	30,579	32,137	32,584	40,501
Total number operations	9,828	11,464	10,507	8,367	11,095	8,920
Average daily operations	324.23	369.80	350.23	269.80	357.90	297.33
Deaths in surgical service	116	85	52	38	41	36
Ratio deaths per 1,000 operations	11.925	7.414	4.948	4.541	3.695	4.036

The following report, compiled from the records of the division, embodies in brief form the activities of the Personnel Branch of the Division of Surgery (general surgery) up to November 11, 1918.

1. Number of medical officers assigned to overseas organizations:

(*a*) Surgical groups	312
(*b*) Mobile hospitals	240
(*c*) Evacuation hospitals	754
(*d*) Base hospitals	1,103
(*e*) Mobile operating units	60
(*f*) Mobile surgical units	7
(*g*) Anesthetic groups	6
(*h*) Added to Red Cross base hospitals	245
	2,727

These figures do not include the original personnel assigned to 50 Red Cross hospitals by the Hospital Division.

2. Number of medical officers assigned as replacements for overseas duty	200
3. Number of officers ordered by Division of Surgery to M. O. T. C., Fort Oglethorpe, Ga., and M. O. T. C., Fort Riley, Kans.:	
(*a*) M. O. T. C., Fort Oglethorpe, Ga	1,053
(*b*) M. O. T. C., Fort Riley, Kans	270
	1,323
4. Number of medical officers who have had courses of intensive training at civilian medical centers:	
(*a*) Mayo Clinic, Rochester, Minn	163
(*b*) Carrel-Dakin treatment of infected wounds, Rockefeller Institute, New York City	490
(*c*) Classes in fractures and war surgery at New York, Boston, Philadelphia, Pittsburgh, Cleveland, Chicago, New Orleans, and San Francisco	1,195
	1,848
5. Number of medical officers on duty in general hospitals, post hospitals, and cantonment base hospitals in this country:	
(*a*) Base hospitals and general	896
(*b*) Post hospitals, etc	137
	1,033
6. Number of medical officers now at training camps	510
7. Number of medical officers who, as far as can be learned at this time, have sailed with overseas organizations:	
(*a*) Surgical groups	40
(*b*) Mobile hospitals	48
(*c*) Evacuation hospitals	532
(*d*) Base hospitals	896
(*e*) Mobile operating units (five sections)	60
(*f*) Mobile surgical units	7
(*g*) Anesthetic groups	6
(*h*) Added to Red Cross base hospitals	245
	1,834

The application papers of every officer carried in the files of this division were reviewed by an officer capable of passing on the qualifications of the applicant; duplicate cards were made on which were entered a brief personal history of the man, together with his classification, based on the attached classification chart; and his name was listed in the files of the Personnel Division as being "Retained for general surgery," in order that his movements might be controlled by recommendation of this division. All orders were placed on both cards, and reports, either from classes of instruction or from the commanding officers of the different hospitals, were entered from time to time as they were received. In this way it was possible to compare division's rating of the individual with that of his instructors and his commanding officers. In only a very small percentage of cases was the division's original rating wrong.

In keeping track of the surgical personnel the simplest system possible was followed. As stated above, duplicate cards were made for each officer, one card being carried in an alphabetical master file, the other in a station file.

The station file contained all base, general, and post hospitals in this country, as well as the numbered hospitals for overseas duty. Whenever a man was moved from one station to another his card was moved with him, proper entry of the order being made on both cards. A set of cards containing the names of all officers assigned to overseas organizations was forwarded to the Chief of Surgical Service, in care of the chief surgeon, American Expeditionary Forces, in order that they might know just what was thought of each man and what his training and instruction had been prior to his sailing for overseas duty.

AFTER THE ARMISTICE.

With the declaration of the armistice there was a natural let down in all the activities; this went hand in hand, however, with a keen appreciation of the newly developing needs that had to be met. As far as these altered conditions and circumstances concerned the Division of Surgery, they emphasized the lessened significance of training officers for overseas duties and the tremendously heightened significance of providing highly specialized surgical skill for the returning overseas wounded.

The arrival of overseas wounded necessitated that all the energies of the division be bent toward providing adequate surgical care. This particular problem was bound up with several essential fundamentals. The port hospitals at best could serve only as clearance hospitals, where a sort of triage had to be worked out, and where, above everything else, an adequate number of beds had always to be available for the reception of patients. From these port hospitals, patients had to be distributed with a due regard for the sentiment which prompted the citizenry of the United States to desire that their own wounded be housed near home. The equally important consideration had to be met of distributing special cases (neurosurgical, fractures, maxillofacial, amputations, etc.) to special centers equipped to afford the best type of specialized treatment. The Surgeon General succeeded in working out a plan that met both of these considerations, and the Division of General Surgery provided adequate personnel of proper professional character and maintained efficiency by frequent conferences (through consultants) as well as by letters of instruction.

A special Peripheral Nerve Commission [19] was created to devise, visé, and control methods for handling all neurosurgical cases; the Empyema Commission continued along its field of special activity;[9] special instructions were drawn up and circulated covering the fundamental principles underlying the treatment of osteomyelitis;[20] special consultation visits were made to check up on the question of preventable deformities; detailed survey was maintained over the various artificial-leg fitting centers; a special officer devoted his whole time to a survey of the treatment of fractures; and a new center for instruction in the Carrel-Dakin technique was established at Walter Reed Hospital.

Along such lines of intensive correlation, control, and supervision the division was working at the end of July, 1919.

PERSONNEL.[b]

(April, 1917, to December, 1919.)

Finney, J. M. T., Brig. Gen., M. D., chief.
Moncrief, William H., Col., M. C., chief.
Sullivan, Raymond P., Col., M. C., chief.

  Hanner, John W., Col., M. C.
  Kanavel, Allan B., Col., M. C.
  Peck, Charles H., Col., M. C.
  Walker, John B., Col., M. C.
  Dye, John S., Lieut. Col., M. C.
  Martin, Edward, Lieut. Col., M. C.
  Moschowitz, Alexis Y., Lieut. Col., M. C.
  Seelig, M. G., Lieut. Col., M. C.
  Snyder, H. McC., Lieut. Col., M. C.
  Weiser, Walter R., Lieut. Col., M. C.
  Cody, Claude C., Maj., M. C.
  Holmes, Claude D., Maj., M. C.
  Kahlke, Charles E., Maj., M. C.
  Keene, Floyd E., Maj., M. C.
  Muller, G. P., Maj., M. C.
  Turnure, Percy R., Maj., M. C.
  Wyer, Henry G., Maj., M. C.
  Davison, Thomas P., Capt., S. C.
  Fisher, Albert G., Capt., S. C.
  Holmes, Benj. H., Capt., M. C.
  Mann, H. L., Capt., M. C.
  Mooradian, A. P., Capt., S. C.
  Wilson, Harry I., Capt., S. C.

CONSULTANTS.

Mayo, Charles H., Col., M. C., chief.
Mayo, William J., Col., M. C., chief.

  de Schweinitz, George E., Col., M. C. (ophthalmology).
  Mosher, Harris P., Col., M. C. (otolaryngology).
  Blair, V. P., Lieut. Col., M. C. (plastic and oral surgery).
  Frazier, Charles H., Lieut. Col., M. C. (neurosurgery).

ROTARY SURGICAL BOARD.

  Mayo, Charles H., Col., M. C.
  Mayo, William J., Col., M. C.
  Binnie, J. F., Lieut. Col., M. C.
  Haggard, W. D., Lieut. Col., M. C.
  McGuire, Stewart, Lieut. Col., M. C.
  Bevan, A. D., Maj., M. C.
  Freeman, Leonard, Maj., M. C.
  Mixter, Samuel, Maj., M. C.
  Ochsner, A. J., Maj., M. C.
  MacKenzie, K. A. J., Capt., M. C.

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[b] In this list have been included the names of those who at one time or another were assigned to the division, during the period, April 6, 1917, to December 31, 1919.

There are two primary groups: The chiefs of the division, and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

REFERENCES.

(1) Regulations for the Government of United States Army general hospitals, 1914, 23. Manual for the Medical Department, United States Army, 1916, par. 290.

(2) Letter from Surgeon General to Dr. William J. Mayo, June 27, 1917. On file, Record Room, S. G. O., 143365 (Old Files).

(3) Memo. for the Division of General Surgery from Col. William J. Mayo, M. C. On file, Record Room, S. G. O., 024.14 (Division of General Surgery).

(4) Circular Letter from the Surgeon General to commanding officers, base and general hospitals, October, 1917. On file, Record Room, S. G. O., 024.2 (Administrative Division), 1917.

(5) Correspondence. On file, Record Room, S. G. O., 321.6 (Medical Department); circular letter from the Surgeon General to commanding officers, base and general hospitals. On file, Historical Division, S. G. O.

(6) Special report of personnel, Section of General Surgery, October 12, 1917. On file, Record Room, S. G. O., Weekly Report File.

(7) Correspondence. Subject: Instruction in Surgery. On file, Record Room, S. G. O., 151418 (Old Files).

(8) Correspondence. On file, Record Room, S. G. O., 024.14 (General Surgery).

(9) Correspondence. Memo., outline of study of empyema, and reports to the Surgeon General from the Empyema Commission. On file, Record Room, S. G. O., 710 (Empyema), 1918. Memo. for the Division of Surgery from Maj. Allen B. Kanavel, M. C. (member of Empyema Commission). Subject: Inspection of Surgical Department, Camp Lee. On file, Inspection File, Surgical Section, Hospital Division, S. G. O.

(10) Office order, No. 97, S. G. O., November 30, 1918. On file, Record Room, S. G. O., 024 (Division of Surgery), 1917.

(11) Report of Division of Surgery. On file, Record Room, S. G. O., Weekly Report File.

(12) Reports of surgical consultants. On file Record Room, S. G. O., Correspondence File 730 (Surgery).

(13) *Review of War Surgery and Medicine*, Vol. I, Nos. 1 to 10 (March to December), 1918; Vol. II, Nos. 1 to 6 (January to June), 1919. Government Printing Office, Washington, D. C.

(14) Manual of Surgical Anatomy, authorized by the Secretary of War and under the supervision of the Surgeon General and Council of National Defense. Prepared under the direction of the Division of General Surgery, in collaboration with the Division of Orthopedic Surgery, Surgery of the Head, Genitourinary Surgery, and the Advisory Staff in Surgery in the Office of the Surgeon General, United States Army, 1918.

(15) Injuries and Diseases of War. A manual based on experience of the present campaign in France, January, 1918. Reprint of the official British manual. By permission of the British war office. Government Printing Office, Washington, D. C., 1918.

(16) Abstracts of War Surgery. Prepared by the Division of Surgery, Surgeon General's Office, 1918. C. V. Mosby, St. Louis, Mo., 1918.

(17) Weekly Reports, S. G. O. (General Surgery), October 3, 1918. On file, Weekly Report File: S. G. O.

(18) Partial statistical report of surgical work in 32 base hospitals, November 7, 1918. On file, Record Room, S. G. O., 730 (Surgery).

(19) Correspondence. On file, Record Room, S. G. O., Correspondence File, 730 (Surgery).

(20) Letter from Surgeon General to commanding officers, base and general hospitals. Subject, Osteomyelitis. On file, Record Room, S. G. O., 710 (name of camp).

CHAPTER XVII.

DIVISION OF MILITARY ORTHOPEDIC SURGERY.

ORGANIZATION.

At a meeting of the American Orthopedic Association held in Washington in May, 1916, it was voted that in consideration of the possible contingencies which might arise in this country from the war in Europe there should be appointed a preparedness committee, whose duty it should be to consider the needs and equipment of orthopedic hospitals, should such be required in any future emergency. The president of the association appointed this committee, which, during the year, formulated a standardization of special hospital supplies and equipment and reported to the association at its meeting in Pittsburgh in May, 1917.

It was evident, from the experience of England, France, and Canada, that there would be need of preparation for the care of disabled soldiers when they should be returned to the United States. The large number of men engaged in the fighting forces in this war resulted in a larger number of disabled soldiers than it had been necessary to deal with in previous wars, and it was early recognized by the countries engaged that it was not only humane, but necessary, to provide for the soldiers who should return disabled in such a way as to enable them to carry on their previous occupations or other occupations more suitable to their handicapped condition.

In April, 1917, it was recognized by the Surgeon General that steps should be taken, even in this early period of the conflict, to provide for these men. Accordingly, it was arranged and so directed that hospitals intended for the reconstruction of disabled soldiers should be established, and through the military director of the Red Cross it was arranged that two such hospitals should be started, one in Washington in connection with the Soldiers' Home and one in Boston in connection with the Robert Brigham Hospital on Parker Hill.[1] These hospitals were to be considered as reconstruction hospitals, and were not only to be devoted to the surgical and medical care of the men who should be returned, but were also to be so equipped and planned as to reinstate the disabled soldier in the industrial world and thus allow him to become an independent wage earner.

In May, 1917, the British liaison officer brought the request that a number of orthopedic surgeons be sent to England to aid in this work,[1] the very great necessity of which among the disabled soldiers in England had been demonstrated, as well as how much could be accomplished toward putting the disabled back into service or into industrial activity. The number of available orthopedic surgeons in England was far from being sufficient to meet the demand for this work, and in recognition of this need, the request was brought. It was then directed by the Surgeon General [2] that there should be selected 20 orthopedic surgeons for this orthopedic reconstruction work in the hospitals in England. Accordingly, 20 orthopedic surgeons, who volunteered to enter the service and to engage in this work overseas, were collected from different parts of the country and an orthopedic surgeon was detailed to accompany the group to England, to help distribute them, to study the situation on the other side of the water, and on his return to report to the Surgeon General. It was arranged with the British Government that these places should be kept filled; that, in case these men were needed for work among the American soldiers on the Continent, others be sent to England to fill their places.[2]

In view of the evident need of providing for physical reconstruction of the soldiers who should be returned from overseas, and as the time when these men would be sent home was uncertain, it seemed to the Surgeon General desirable to continue with these general plans and to canvass the different parts of the country with a view to ascertaining where such might best be carried out. To put this into action, the following letter was sent with the directions to make investigation for future use:

War Department,
Office of the Surgeon General,
Washington, June 3, 1917.

Maj. E. G. Brackett, M. R. C.,
166 Newbury Street, Boston, Mass.

My dear Major Brackett: It is the desire of the Surgeon General that, during the absence of Major Goldthwaite, M. R. C., you continue the work of organizing the orthopedic units for the United States Army, and that you take such steps for securing hospital accommodations and sites for temporary construction as were covered in verbal advice recently given you by this office.

Very sincerely,

(Signed) H. P. Birmingham,
Colonel, Medical Corps.

At a meeting of the American Orthopedic Association, held in Pittsburgh in May, 1917, it had been voted that the association offer the services of its members to the Government in any way most acceptable, and it had been suggested that aid in orthopedic methods of examination and treatment and instruction with regard to conditions affecting the soldier in training would be a practicable activity. On July 2, 1917, the resolutions passed by the association were presented to the Surgeon General, who at once accepted the suggestion, and asked that a brief of directions be prepared at once for distribution to the surgeons in the camps and to serve as a basis of instruction and of examination on the matters of orthopedic interest. It was decided that this brief should comprise instruction in regard to the foot and to footwear, and to the various orthopedic affections, and should be the guide for standardization of the orthopedic work in military usage. Several members of the association were at once telegraphed to come to Washington to aid in the preparation of this. The representative of orthopedic surgery in the Surgeon General's Office met with and assisted this committee with the preparation of this bulletin of instruction, which was incorporated in the first list of directions for use by the camp medical officers.[3]

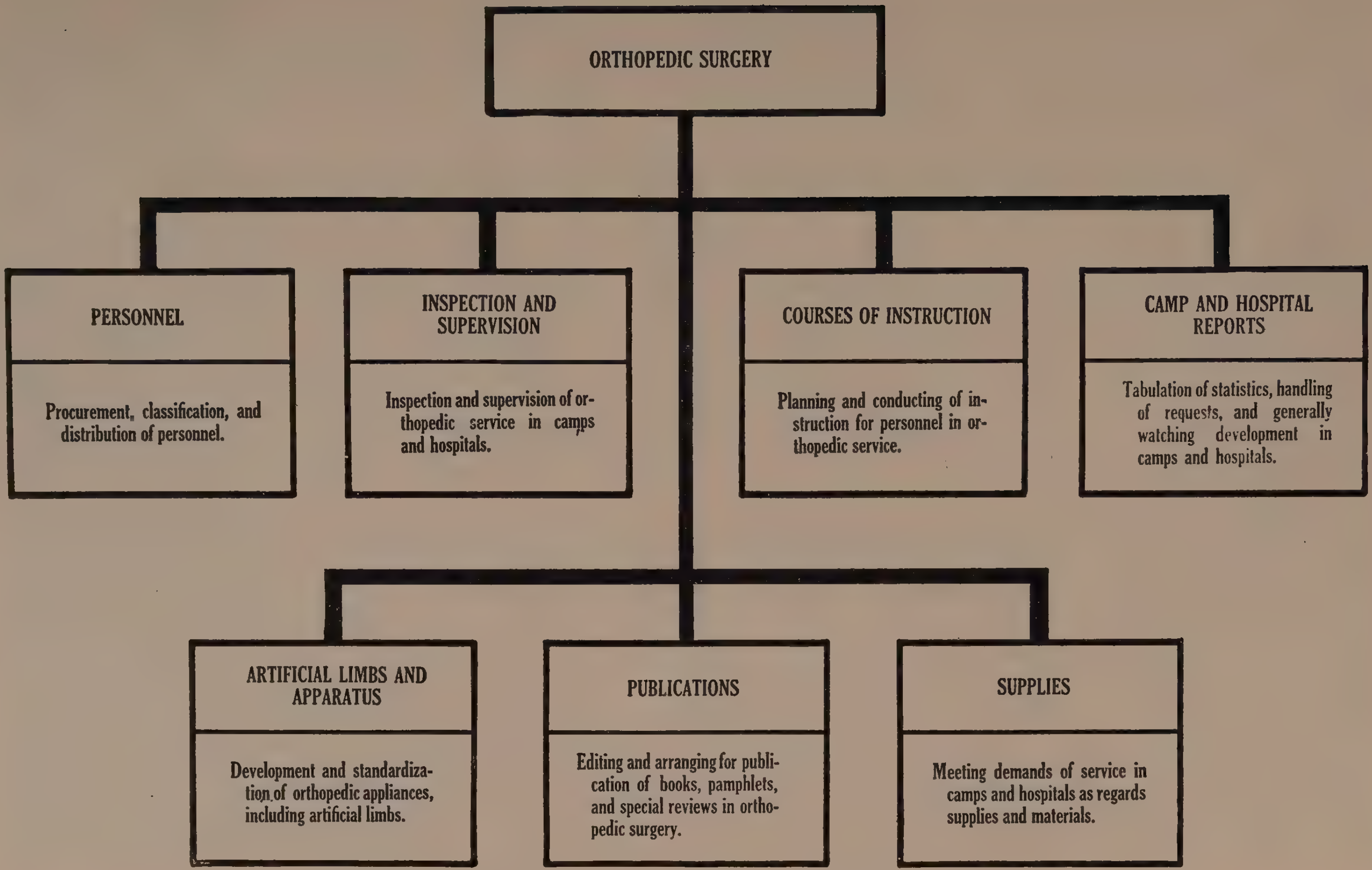
In line with the plan of the Surgeon General to place in his office a number of men who should represent the special departments of medicine and surgery, in order that each might act in an advisory capacity in matters pertaining to his specialty, and might organize and correlate its activities with the general plan of military medical organization, on July 25 an orthopedic surgeon [4] was detailed to the Surgeon General's Office to take charge of that part of the work which included orthopedic surgery and orthopedic reconstruction.

It was evident at once that a large amount of work would be necessary at the time of the incoming drafts in camps, and, as reports from abroad showed the rapid development of the need of orthopedic surgery among the disabled soldiers, and as it was apparent that there would be need of preparation on a large scale for the care of the soldiers when they would be returned to this country, plans were at once formulated to provide for the work at the Surgeon General's Office. An Orthopedic Advisory Board was formed, composed mainly of ex-presidents of the American Orthopedic Association, and of those representing the orthopedic section of the American Medical Association.[5] This orthopedic board had several meetings and was of great assistance to the division. The duties of the board were to consider and report on the plans and requirements for orthopedic reconstruction work and other orthopedic problems on which advice was needed by the division.

The first meeting was held on August 2, 1917. It was decided at this meeting that a letter regarding the formation of the board be sent to orthopedic surgeons, requesting that all questions of an orthopedic nature be submitted to, and go through the chairman of the board; also that a circular letter be sent to orthopedic surgeons, for the purpose of obtaining data on their qualifications and their availability for service. In view of the large number who would be called upon for orthopedic service during the war, it was the opinion that instruction should be instituted in the universities and hospitals to give additional training to those who should take up the work, and it was suggested that a circular bulletin be sent at intervals to all those who were interested in orthopedic surgery giving information in reference to the activities of this division. Accordingly, a bulletin announcing the formation and purposes of the council was sent to all the surgeons in the country who were known to be interested in orthopedic surgery.[6]

In August the orthopedic surgeon detailed to study orthopedic conditions in England returned with his report of the condition in England and France. The great need of this work, as shown by its development in those countries, was presented, urgent statements from the medical authorities abroad were given, and plans by which the work should be begun were proposed. It was then decided by the Surgeon General, after several conferences with the senior officers, to create a Division of Orthopedic Surgery to plan for the providing of the proper personnel both in France and in the United States and to arrange for the necessary hospital equipment overseas, which would provide for the special care of the soldier as soon after his injury as possible, for the development of the orthopedic reconstruction in the United States, and for the work of orthopedic surgery in the Army. Two orthopedic surgeons were therefore directed by the surgeon to submit to him a report which would serve as a basis for the development of such a division. This was submitted and approved on August 17, 1917.[7] The functions of the division are shown in Chart XVIII.

It was evident at this period that the immediate needs, in addition to the work already outlined for the cantonments, were to provide for the care of orthopedic patients in France by the establishment of hospitals specially



PERSONNEL

Procurement, classification, and distribution of personnel.

INSPECTION AND SUPERVISION

Inspection and supervision of orthopedic service in camps and hospitals.

COURSES OF INSTRUCTION

Planning and conducting of instruction for personnel in orthopedic service.

CAMP AND HOSPITAL REPORTS

Tabulation of statistics, handling of requests, and generally watching development in camps and hospitals.

ARTIFICIAL LIMBS AND APPARATUS

Development and standardization of orthopedic appliances, including artificial limbs.

PUBLICATIONS

Editing and arranging for publication of books, pamphlets, and special reviews in orthopedic surgery.

SUPPLIES

Meeting demands of service in camps and hospitals as regards supplies and materials.

CHART XVIII.—Division of Military Orthopedic Surgery, Surgeon General's Office, June, 1918.

equipped and supplied with the special personnel; to provide for the demand for a large increase of available surgeons who could aid in carrying on this work, both in France and in the United States; to provide hospital facilities for the orthopedic reconstruction of disabled soldiers returning to the United States; and at the same time to provide the means for the industrial reeducation of these men, to fit them for return to civil life, and to arrange for the installation of the necessary equipment; to provide a large corps of specially trained masseurs to treat the joint, muscle, and deformity conditions which were being met with in the other countries; and to organize these workers into some official position.

It was decided by the Surgeon General at this time that the plans for the work of orthopedic reconstruction should be carried on under the Surgeon General's Office, and directions were given to the Division of Orthopedic Surgery to proceed in their development.[4] In order to secure the best advice, a vocational education committee (Active Vocational Board) was appointed [5] and approved by the Surgeon General. At a meeting of this board and the Division of Orthopedic Surgery in August, 1917, the general plans were discussed. As a result it was decided that there should be a broad plan of reconstruction, comprising all departments of medicine and surgery involved in the problem, and that there should be a central division of reconstruction and special hospitals to correlate the work of the different departments which had the special reconstruction problems to consider. This was recommended to the Surgeon General, who created a Department of Special Hospitals and Physical Reconstruction (later, Division of Physical Reconstruction, q. v.).

THE SOURCES AND METHODS OF REPLENISHMENT OF ORTHOPEDIC PERSONNEL.

After the original personnel of the Division of Military Orthopedic Surgery was more or less automatically supplied and determined by the enrolling of the available trained orthopedic surgeons, it was quite apparent that this force must be considerably augmented as the demands upon its numbers increased. It was clear that the source of this supply must be found among the younger general surgeons and a number of the many young practitioners who had already obtained acceptable training along surgical lines. The policy of this division was to depend entirely upon recommendations or personal applications for the first contact with the candidate. When such recommendation or application was received, the person recommended or submitting the application was immediately reserved to orthopedic service if not commissioned, or if commissioned and not reserved for other service. An effort was made to verify all statements concerning the experience and qualifications of the applicant and to decide as to his desirability and his availability. Applicants who appeared desirable and available were then either transferred to this service, if already commissioned, or were advised as to seeking a commission before assignment. As soon as possible these officers were assigned in classes to the various courses of instruction in orthopedics in order to receive special instruction in both military and surgical aspects of their future work before assuming their camp duties. It was evident, further, that it would be necessary to give special instruction in the principles of orthopedic surgery to some of the younger surgeons who desired to enter the Division of Orthopedic Surgery in order to train them as assistants in hospitals to serve under qualified orthopedic surgeons.

In line with these views, early in September, 1917, arrangements were made with the postgraduate department of Harvard University to establish a course of instruction and a definite syllabus of this instruction was prepared with the advice of the advisory council.[8] On October 15, arrangement was made for a course to be given in Philadelphia.[8] Early in November, with the experience gained in the university courses, a meeting of the council and teachers was held in Washington, and a standarized course of instruction was determined upon. This schedule was used in all courses of instruction.[9] Through the cooperation of the orthopedic surgeons of New York, another course was arranged for that city, instruction to begin November 1, 1917.[10] As many of the men from the far South and Southwest applied for the opportunity of entering this division, and for instruction, it was decided that in order to avoid the expense of long transportaion, a similar course should be established in that part of the country. Accordingly, such arrangements were made with the University of Oklahoma City.[11]

The facilities of the Army Medical School, Washington, D. C., were offered for special orthopedic instruction, and property adjoining the Army Medical School was leased for this special purpose. About this time an orthopedic service was established at the Walter Reed Hospital, and the use of the wards and clinical material was offered in connection with the proposed course established officially through the approval of the Surgeon General.[12] The first class under this arrangement entered upon the course on November 12, 1917. The establishment of the course as a part of the Army Medical School was forecast in announcement by the commandant of the school, from which the following extract is quoted: [13]

> It is quite possible that this may mark the beginning of a transition of the Army Medical School from an institution designed to train officers for general purposes into one whose special province shall be to train men in the general fundamentals for Army work and with special reference to their work in special lines.

Other schools were established, following the same plan and schedule of instruction, and in the summer of 1918, courses were being given in Boston, New York, Philadelphia, Washington, Camp Greenleaf, Chicago, Oklahoma City, and Los Angeles. In all, 691 officers passed through the different schools.[14]

ARTIFICIAL-LIMB PROBLEM.

The Surgeon General, in August, 1917, assigned to the orthopedic surgeons the care of "cases requiring surgical appliances, including artificial limbs." [15] The artificial-limb problem had already become a serious one abroad; the supply was far short of the demand, and in many particulars the substitute failed to permit the restoration of function of the lost member to the degree that it seemed reasonable to expect. It appeared wise, therefore, to study the problem as exhaustively as possible. Accordingly, one member of the Division of Military Orthopedic Surgery was assigned to this work, and the Division of Physical Reconstruction turned over to him the questions of equipment and supply in which it was interested. Further, the Surgeon General authorized the establishment of a laboratory for investigation and experimentation along the lines of artificial-limb construction.[16] The proper understanding of the problem necessitated its study from the standpoint of the amputation, the construction of the artificial limb, and the occupational demand to be made upon the substitute.

The literature on the subject which had appeared since the beginning of the war was considerable. It appeared desirable, first, to study this carefully to determine any possible change in the viewpoint of the surgeon regarding amputation, and any improvements in artificial-limb construction and manufacture, as well as to see how the general questions of supply, demand, and method of distribution were being solved. A decided aid in the understanding of the problem was obtained by a study of the Canadian situation, the Military Orthopedic Hospital at Toronto being visited for this purpose during the early fall of 1917.

The artificial-limb industry was undoubtedly further advanced in efficiency and more widely distributed in the United States at the beginning of the war than in any other country. Moreover, a number of manufacturers had visited Europe during the early years of the war, and several had established factories abroad for the benefit of the Allies. The manufacturers, therefore, were in a position to render most efficient assistance. At the suggestion of the Council of National Defense, they met in Washington, in October, 1917, and organized the Association of Artificial Limb Manufacturers of the United States,[17] with the object of more efficiently coping with the situation. In order to obtain the benefit of their wide experience, conferences were held, whenever possible, with individual members, and a questionnaire covering various details of the problem was sent to all.

The information obtained from these various sources indicated that the views of the artificial-limb makers were in the main in accord with the best modern surgical experience, except as regards the possibilities of end-bearing; moreover, it developed that they were able without increasing their facilities, to care for approximately 1,000 cases per month.[18]

A comprehensive plan for carrying on the work was finally evolved,[19] but as it had been decided by the Surgeon General that only provisional limbs should be provided to the men while in service, the work was limited to the development of this form of prothesis and a means of providing such. The greatest help was given by the manufacturers of artificial limbs in developing the most practical form of leg and arm; they also undertook to furnish the necessary parts, and this form was used throughout, with very little modification, and with satisfaction. The problem of providing the permanent prothesis, after the discharge of the soldier, was delegated to the War Risk Bureau.[20]

It seemed advisable in the early days of planning for this problem to concentrate the work of caring for the amputation cases in as few places as possible for reasons both of expense, of equipment, and of lack of a sufficient trained personnel. It was decided, therefore, to confine this work to the Walter Reed Hospital, Washington, D. C., and to General Hospital No. 3, at Colonia, N. J.[21] The work of caring for the amputation involved the surgical care of the stump, provision for and fitting of the temporary prothesis, and the training in their use. Later, in response to orders, it was necessary to extend the field of this activity, and therefore additional centers were established in General Hospital No. 6, Fort McPherson, Atlanta, Ga.; Fort Sheridan, Ill.; Letterman General Hospital, San Francisco; General Hospital No. 26, at Des Moines, Iowa; and General Hospital No. 29, at Fort Snelling, Minn.[22]

PHYSIOTHERAPY.

In the early period, when reconstruction work, surgical and otherwise, was being considered, it became evident that there would be a large demand for special massage and the allied therapies of the kind which would require special training, and also that the development and control of this supply should be begun as soon as possible. At this period certain hospitals were being established with the aid of the Red Cross, and therefore the following letter was sent to the military director of the Red Cross from the chief of the division, on July 12, 1917, setting forth the need of this work and suggestions as to its fulfillment:

> In planning out the necessary equipment of a reconstruction hospital, the facilities for mechanical hydrotherapy, and also for massage, have seemed to be of the very greatest importance. This special kind of reconstructive work would require not only a corps of individuals who are trained but also it would seem necessary to have a corps under supervision and control, so that the work could be standardized, not only in an individual unit, but also in this reconstructive work in general. It seemed to us wise, therefore, if in some way this work could be standardized, so to speak, and we could have a national training corps. We have, therefore, made plans for an organization of this kind, and I am sending you this tentative plan for your criticism or for your approval. If you think it wise, it will require a certain amount of investigation and further elaboration of the details of the organization. Would you be good enough to let me hear from you on this point? I am sending you on this copy, asking if you could put it in the book of plans of the reconstruction hospital, all of which can be discussed whenever the time comes.

This met with immediate response. Because of the corroboration of the needs of this movement, as shown in the reports of the work in England as well as in France and Canada, it was decided that it would be necessary to provide for this work by some form of enrollment of a special group of workers who would be given an examination as to their qualifications for the necessary training. To obtain the best advice, the directors of recognized schools of physical training and allied therapies were invited to a conference in Washington to meet with the members of the division to discuss this subject and the means of meeting the need. At this meeting, representatives from the following schools were present: The Boston School of Physical Education; The New Haven (Conn.) Normal School; The Normal School of Physical Education, Battle Creek, Mich.; The Possé Normal School, Boston, Mass.; the teachers' department of physical education, Oberlin College, Oberlin, Ohio; department of physical education of Leland Stanford Junior University. It was decided by these representatives and the division that the list of specially trained workers was entirely inadequate and that training should be given by a three months' intensive course. The well-recognized schools of physical education were asked to arrange for a census of their graduates and to arrange for a short course to be given persons qualified for special training. The qualifications, applications, and the schedule of instruction necessary for such an intensive course were decided upon by the representatives of the conference, and a report thereof was rendered to the Surgeon General.[19] It was understood that the Government should take no part in the responsibility of this training, but when an applicant was considered eligible as a candidate, having qualified in the requirements decided upon in the Surgeon General's Office, she should present herself for examination and for enrollment if accepted.

In the latter part of December, 1917, the division was directed to proceed with plans necessary to select suitable applicants and to determine standards of qualifications.[23] A supervisor was to be installed to work in conjunction with the Department of Nursing and to select these applicants under the same general plan as applied to the general nurses. The Red Cross offered to cooperate, and to furnish lists of selected names. It was decided that the name of Physical Reconstruction Aides be used. On December 31, 1917, the plan of organization had been completed and was approved and signed by the Surgeon General. This plan of organization included occupational aides as well as the physical reconstruction aides. Schools were established for the beginning, the graduates of which were those who were first sent over seas. Later, in the spring of 1918, with the establishment of the Division of Physical Reconstruction, this work was transferred to that division.

INSTRUCTION IN CARE OF SOLDIER'S FOOT.

A serviceable foot is one of the most important requisites of the soldier, and it was early recognized by those experienced in the work of the Medical Department of the Army that orthopedic surgeons could do nothing that would be of greater importance than the assistance they might render in the preservation of foot efficiency. With the exception of the classical work, the Soldier's Foot and the Military Shoe,[24] nothing was available in military publications beyond the rules governing the rejection of men with foot defects of certain types. Hence attention was first directed to the preparation of a circular containing specific directions for the orthopedic examination of the recruit.[25] In this the attempt was made to estimate the relative significance of the various signs and symptoms associated with weak feet, so that the examining surgeons might be in a position to decide whether an apparently suspicious foot would be capable of meeting the requirements of military service or would be likely to fail to measure up to its demands. The spine and its affections were similarly considered, but in a more brief manner, as befitting their relative importance.

Supervision of the condition of the soldiers' feet is recognized as a duty properly demanded of the regimental officers; they are expected to possess a sufficient knowledge of minor foot ailments to intelligently direct their treatment by the noncommissioned officers or the selected enlisted men trained for this work. Conferences with shoe manufacturers, orthopedic surgeons, and other medical officers from the camps, and all those having some knowledge of the conditions did much to make clear the main points of difficulty with the shoe problem. Considerable trouble was experienced, not only at the start but throughout the war, in securing sufficient shoes of the proper sizes, and in having the proper attention paid to fitting; moreover, the men themselves often strongly objected to accepting shoes of the proper length, and when forced to take them, would even exchange them with their comrades for smaller ones. To meet the situation, the division sought to secure the active cooperation of all departments of the Army, and laid more and more emphasis on the intensive instruction of the orthopedic personnel in all the details of foot care.[26] Courses of instruction in the care of the foot and its coverings were also given to line officers and candidates for commission, selected enlisted men of the Medical Department, and all enlisted men of the Army, and it was directed that particular attention be given by medical officers to the condition of the feet at each regular semimonthly physical examination.

To supply the necessary information in a form suitable for the newly commissioned regimental officers, the men selected to carry out the treatment, as well as the enlisted men themselves, a small Manual of Minor Foot Ailments[27] was prepared and issued in November, 1917. This manual aimed to supply in a condensed form and in simple language the essential facts about the care of the foot and its coverings, and the ordinary methods of treatment of the simpler foot affections incident to active military service.

The importance of orthopedic surgery in the medical work of the modern army was a development of the World War, and the necessity for including this subject in the list of those to be covered by the war manuals, planned by the Medical Department of the Army and the Council of National Defense, was early recognized by the editorial committee of the council. The several years' experience of the English in the use of orthopedic measures had proved their value not only in restoring apparently hopeless cripples to some degree of economic usefulness, but also in the actual return of a high percentage of the wounded to the firing line. This experience had resulted in the publication of two epoch-making books by an officer of the Royal Army Medical Corps. In view of our lack of experience, it was obviously wise for us to draw largely from the original sources in the preparation of our Manual of Military Orthopedic Surgery [28] and this the author of the books referred to above generously permitted. Much of the matter for the various chapters on the foot and its care had already been collected by the Orthopedic Advisory Board in the preparation of the circular on orthopedic examination, and other chapters were added by various members. The chapter on Methods of Fixation, by agreement with the Division of General Surgery, was so prepared as to cover the subjects of splints in such a manner as to make it suitable for all surgical needs, and particularly for the use of the Fracture Section.

During the early months of the war, when the camps were being filled with recruits, there was not a sufficient number of experienced and trained personnel to provide for the sudden demands of a medical military nature. It was necessary to distribute men of professional experience over as wide an area as possible and, therefore, the plan was evolved of placing men of lesser experience for permanent duty in the camps and in the camp base hospitals, and dividing the country into areas, determined by transportation facilities rather than purely geographical means, and detailing men of greater experience to act as consultants and teachers for these various areas. Although some difficulty naturally resulted at first, because of the lack of military experience and the constantly changing requirements made upon these men, this plan eventually became most successful and was continued throughout the war. Through this system, routine examinations for special conditions were made of all recruits, and the more difficult conditions were reserved for the opinion of the consultant on his round. Instruction was given to line officers as well as noncommissioned officers both by the men in the camps and by the consultants on their rounds.

It was necessary to provide the equipment for conditions which, before the war, had not existed and for which no provision was made. To meet this, it was necessary to determine the requisite supplies, to furnish lists for such, and to arrange for their provision on a large scale. For this latter purpose, aid was obtained from large manufacturers, who gave the benefit of their experience, as well as assistance in furnishing the supplies quickly and in large quantities. In most camps or hospitals, shops were equipped in which the mechanical appliances could be made or adjusted, and in practically all of the camps cobbling outfits were established for the repair and alteration of shoes.

REORGANIZATION.

With the reorganization of the Surgeon General's Office in the autumn of 1918 (see Organization Chart XXIV) the Division of Orthopedic Surgery became a section of the Division of Surgery,[29] continuing so until September 9, 1919, when the Division of General Surgery became a section of the Hospital Division.[30]

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Brackett, E. G., Col., M. C., chief.

Allison, Nathaniel, Col., M. C.
Breckinridge, S. D., Col., M. C.
Goldthwaite, Joel E., Col., M. C.
Baer, William S., Lieut. Col., M. C.
Begg, A. S., Lieut. Col., M. C.
Osgood, Robert, Lieut. Col., M. C.
Rugh, J. T., Lieut. Col., M. C.
Silver, David, Lieut. Col., M. C.
Adams, Z. B., Maj., M. C.
Colvin, A. R., Maj., M. C.
Emerson, Kendall, Maj., M. C.
Erving, William G., Maj., M. C.
Haynes, Henry R., Maj., S. C.
Magnuson, Paul D., Maj., M. C.
Peters, William C., Maj., M. C.
Yount, C. C., Maj., M. C.
Miller, O., Capt., M. C.
Morison, H., Capt., S. C.
Morse, J. H., Capt., S. C.
Pannaci, C. E., Capt., M. C.
Pearce, Samuel B., First Lieut., M. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

ADVISORY BOARD.

Brackett, E. G., Col., M. C.
Goldthwaite, J. E., Col., M. C.
Albee, F. H., Lieut. Col., M. C.
Davis, G. G., Lieut. Col., M. C.
Silver, David, Lieut. Col., M. C.
Corbusier, H. D., Maj., M. C.
Freiberg, Albert H., Maj., M. C.
Lovett, Robert U., Maj., M. C.
Porter, John L., Maj., M. C.

REFERENCES.

(1) Correspondence. On file, Record Room, S. G. O., 155420, 167136, 170660, and 173885 (Old Files).

(2) Letter from the Surgeon General to the American Red Cross, Washington, D. C., July 14, 1917. On file, Record Room, S. G. O., 167136 (Old Files).

(3) Circular No. 23, W. D., S. G. O., August 13, 1917.

(4) S. O., No. 171, W. D., July 25, 1917, par. 130.

(5) Announcement made by the Surgeon General, United States Army, of Department of Military Orthopedics, August 20, 1917. On file, Record Room, S. G. O., 167136 (Old Files).

(6) Letter from the Surgeon General, United States Army, to surgeons, August 20, 1917. On file, Record Room, S. G. O., 730 (Orthopedics).

(7) Special report from the Division of Orthopedic Surgery, to the Surgeon General, United States Army, October 17, 1917. On file, Record Room, S. G. O., Weekly Report File. Plan for organization and development of Orthopedic Department, submitted by Maj. E. G. Brackett and Maj. J. E. Goldthwait, approved August 17, 1917. On file, Record Room, S. G. O., 210122.

(8) Article on Division of Military Orthopedic Surgery, November 11, 1917. On file, Record Room, S. G. O., 730 (Orthopedics). Reports and Correspondence. On file, Record Room, S. G. O., 353 (Orthopedics).

(9) Schedule of orthopedic instruction. On file, Record Room, S. G. O., Correspondence File, 730 (Orthopedics).

(10) Correspondence on instruction orthopedics. On file, Record Room, S. G. O., 353 (New York City, N. Y.) (F); 353 (Orthopedics, General); 730 (Orthopedics).

(11) Correspondence. Subject: Instruction Orthopedics. On file, Record Room, S. G. O., 353 (Oklahoma City, Okla.) (F); 353 (Orthopedics, General); 730 (Orthopedics).

(12) Correspondence. On file, Record Room, S. G. O., 353 (Walter Reed General Hospital) (K); 353 (Orthopedics, General); 730 (Orthopedics).

(13) Letter from Brig. Gen. William H. Arthur, commandant, Army Medical School, to the Surgeon General, outlining course for twenty-second session, November 3, 1917, par. 4. On file, Record Room, S. G. O., 730 (Orthopedics).

(14) Abstract of reports Orthopedic Division, S. G. O. On file, Record Room, S. G. O., 024.14 (Orthopedic Section).

(15) Letter from the Surgeon General, United States Army, to Col. Alfred E. Bradley, August 20, 1917. On file, Record Room, S. G. O., 167136 (Old Files).

(16) Annual Report of the Surgeon General, United States Army, 1918, 399.

(17) Letter from Association of Artificial Limb Manufacturers of America, dated October 19, 1917, to the Surgeon General. Subject: Meeting in Washington. On file, Record Room, S. G. O., 442.3 (Artificial Limbs).

(18) Correspondence. On file, Record Room, S. G. O., 442.3 (Artificial Limbs). Weekly Reports. On file, Record Room, S. G. O., Weekly Report File.

(19) Weekly report, Division of Military Orthopedic Surgery, March 8, 1918. On file, Record Room, S. G. O., Weekly Report File.

(20) Letter from Surgeon General to commanding officers of general and base hospitals, December 27, 1917. Subject: Provisional and Permanent Applicances. On file, Record Room, S. G. O., 442.3 (Artificial Limbs).

(21) Amputation reports. On file, Record Room, S. G. O., 707.2 (Walter Reed General Hospital) (K); 707.2 (General Hospital No. 3, Colonia, N. J.) (K).

(22) Amputation reports. On file, Record Room, S. G. O., 707.2 (General Hospital No. 6, Fort McPherson, Atlanta, Ga.); Fort Sheridan, Ill.; Letterman General Hospital, San Francisco, Calif.; General Hospital No. 26, Fort Des Moines, Iowa; and General Hospital No. 29, Fort Snelling, Minn.) (K).

(23) Reports on file, Record Room, S. G. O., Correspondence File, 353.91-1 (Reconstruction).

(24) Munson, Edward Lyman: The Soldiers' Foot and Military Shoe. A handbook for officers and noncommissioned officers of the line. George Banta Publishing Co., Menasha, Wis., 1917.

(25) Circular No. 23, S. G. O., W. D., August 13, 1917. On file, Record Room, S. G. O., 196967 (Old Files).

(26) Correspondence. On file, Record Room, S. G. O., Correspondence file, 444.8 (Orthopedic Equipment).

(27) Minor Foot Ailments, Shoe Fitting. A manual for noncommissioned officers and selected enlisted men. Prepared by War Department, S. G. O. On file, S. G. O., Finance and Supply Division.

(28) Medical War Manual No. 4, Military Orthopedic Surgery. Prepared by the Orthopedic Council, Medical Department, United States Army. Lea & Febiger, Philadelphia and New York, 1918.

(29) Office Order No. 97, November 30, 1918, S. G. O. On file, Record Room, S. G. O., Correspondence File, 024.1 (Administrative Division).

(30) Office Order No. 777, S. G. O. On file, Record Room, S. G. O., Correspondence File 024.14 (Division of Surgery).

CHAPTER XVIII.

DIVISION OF SURGERY OF THE HEAD.

Through the efforts of the General Medical Board of the Council of National Defense and of the various ophthalmological and otolaryngological societies, the surgeons of the country who were fitted to assume the obligations of ophthalmological, otolaryngological, brain, and oral and plastic surgery, or who were willing to fit themselves by special instruction to assume such duties, were enrolled and classified. The names of those willing to accept service in these departments were filed in the record room of the Surgeon General's Office.

The Surgeon General, through conferences and correspondence with representatives of the various organizations concerned and of the committees and subcommittees of the Council of National Defense, kept in close touch with all the phases of the development of their work, and in consequence determined upon the establishment of a Division of Surgery of the Head (head surgery) in his office. This plan was consummated on July 9, 1917, and quarters in the Surgeon General's Office were assigned and opened.[1] Eventually (Sept. 29, 1917) the various committees and subcommittees of the Council of National Defense which had represented the surgical specialties ceased to exist, all of their work being merged into the Division of Surgery of the Head of the Surgeon General's Office. This division, which eventually embraced the Sections of Ophthalmology, Otolaryngology, Brain Surgery, and Oral and Plastic Surgery, continued the work of the selection and classification of surgeons from civil life having special training in the branches concerned, and developed arrangements whereby intensive training could be given to other surgeons not yet fully qualified in these regards, the whole purpose being to make available Medical Reserve officers qualified for active duty in line with these specialties.

During the period between the time of the establishment of the Division of Surgery of the Head (July 9, 1917) and the cessation of the committees and subcommittees of the Council of National Defense much work in correlation was performed in relation to the needs of the Army in ophthalmology, otolaryngology, oral and plastic surgery, and brain surgery.

Along this line were the efforts in connection with the preparation of plans for a special hospital to be devoted to Surgery of the Head (head hospital) of 1,000-bed capacity, to be operated in France.[2] On August 17, 1917, the committees of the council representing the head surgery specialties formed subcommittees (personnel, equipment, shop, hospital construction) to carry out the authorization by the Surgeon General of the head hospital. For many weeks the members of these subcommittees worked along these lines, were in constant consultation with supply departments of the Army, with the American Red Cross, with architects, laboratories, optical firms, manufacturers, directors of base hospitals already established,[1] and ultimately elaborated and compiled generous plans, which, with the cost involved, were presented to the Surgeon General, receiving his approval.

The Division of Head Surgery as originally organized (see Chart XIX) continued to function until November 30, 1918, when it was changed to the Section of Head Surgery of the Division of Surgery, the section including ophthalmology, otolaryngology, neurosurgery, and oral and plastic (maxillofacial) surgery.[3] The functions and activities of the division are summarized below:

(A) The classification of the surgeons available for service secured by sending out questionnaires and from the reports of confidential State advisers.

(B) The classification of officers in the service, following special instructions of the Section of Surgery of the Head at cantonment base hospitals and the reports from commanding officers of hospitals and general inspectors.

(C) *Equipment.*—1. Standardization of instruments and material.

2. Selection of instruments for base hospitals and for the special hospital for surgery of the head (No. 115).

3. Selection of equipment for optical units.

4. Standardization of spectacle frames and size of lenses for military use.

5. Investigation of possibility of domestic production of glass for artificial eyes, and securing the manufacture of such glass as well as the manufacture from it of artificial eyes.

6. Standardization of an efficient goggle for aviators.

(D) *Educational.*—1. Outline of course of lectures to be given in cantonment base hospitals and at Medical Officers' Training Camps.

2. List of books for libraries at base hospitals.

3. Five books dealing with special surgery of the head compiled and the literature dealing with surgery of the head in all its branches abstracted.[4]

(E) *Field organization.*—1. A Section of Surgery of the Head in the Surgical Service was authorized for each base hospital in this country, and personnel assigned.

2. Assignments of specialists to post and general hospitals when requested.

3. Assignments to Medical Officers' Training Camps for military training.

4. Assignments to the Medical Service, Aviation Section, Signal Corps.

5. Inspections of Section of Surgery of the Head at camp base hospitals.

6. Inspection in France of the British, French, and American base and evacuation hospitals, and their facilities for surgery of the head.

(F) Assignments of officers to base and evacuation hospitals for overseas service.

(G) Special hospital for surgery of the head (No. 115) organized for service overseas.

(H) Mobilization of one central optical unit and 14 auxiliary units, which were sent overseas on request of commander in chief.

(I) Supply of spectacles to soldiers.

(J) *Statistics and other activities.*—1. Enumeration of officers classified. (Details under section reports.)

2. Enumeration of officers given intensive surgical training in the various schools conducted through this division.

LIST OF SCHOOLS AND LABORATORIES.

1. Officers' School of Plastic and Oral Surgery, Northwestern University Dental School, Chicago, Ill.

2. Thomas W. Evans's Museum and Oral School of Surgery, University of Pennsylvania, Philadelphia.

3. Neurosurgical Schools: Chicago, Dr. Dean Lewis, director; Philadelphia, Dr. Charles H. Frazier, director; New York, Dr. C. S. Elsberg, director.

4. Neurosurgical, Plastic and Oral Surgical School of St. Louis.

(K) Enumeration of officers assigned. (Details under section reports.)

(L) Enumeration of dental oral surgeons assigned duty with oral and plastic surgeons.

(M) Schools at Fort Oglethorpe, Ga., ophthalmology, otolaryngology, neurosurgery, oral and plastic.

(N) Army neurosurgical laboratory, Johns Hopkins University, Baltimore, Md., Capt. L. H. Weed, director.

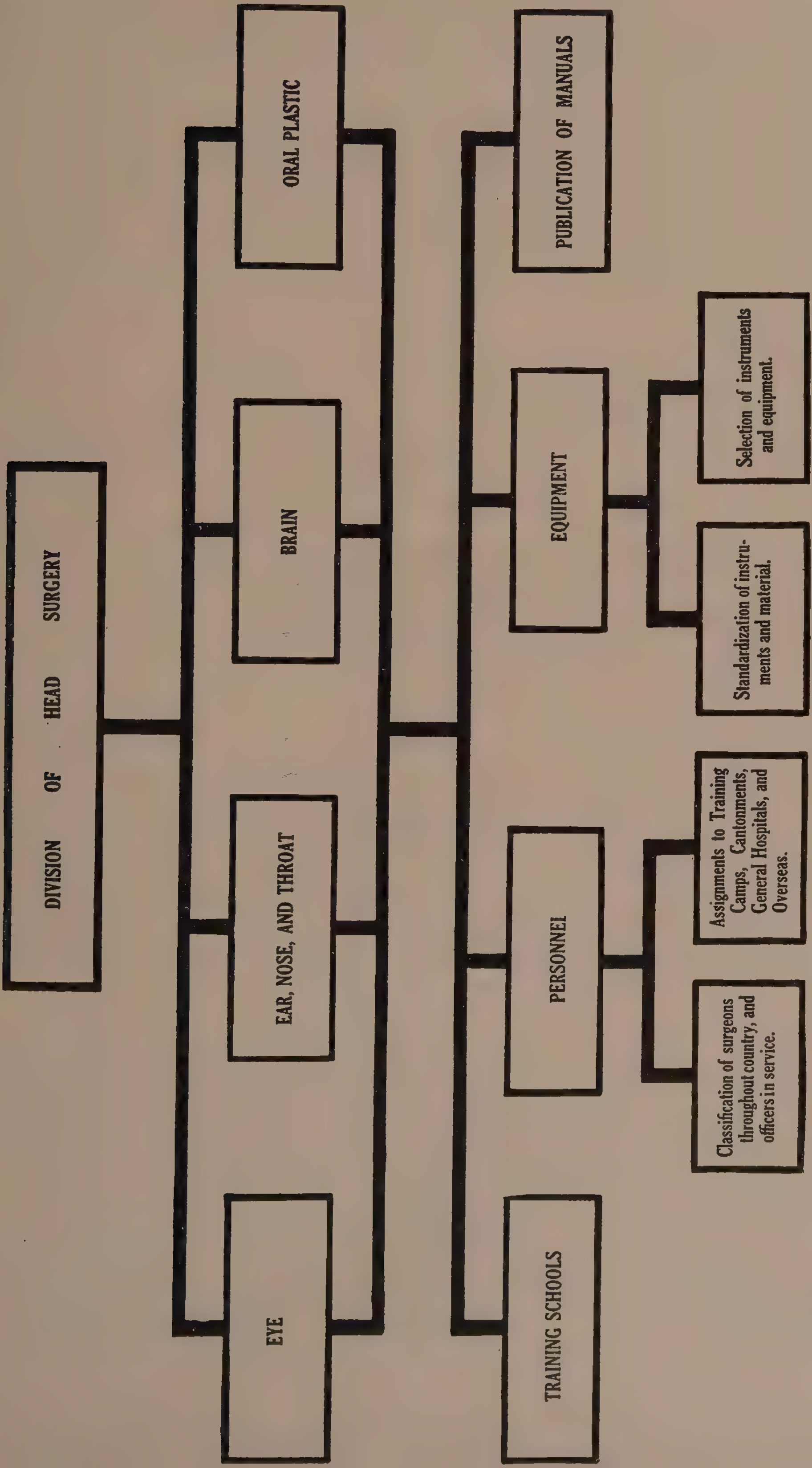
DIVISION OF HEAD SURGERY
EYE
EAR, NOSE, AND THROAT
BRAIN
ORAL PLASTIC
TRAINING SCHOOLS
PERSONNEL
EQUIPMENT
PUBLICATION OF MANUALS
Classification of surgeons throughout country, and officers in service.
Assigments to Training Camps, Cantonments, General Hospitals, and Overseas.
Standardization of instruments and material.
Selection of instruments and equipment.

CHART XIX.—Division of Head Surgery, Surgeon General's Office, June 1918.

The professional work which the Division of Surgery of the Head supervised in this country included also the eye and ear tests for the Aviation Section of the Signal Corps; the examination of all recruits whose visual qualifications were doubtful and the treatment of diseases and injuries of the eyes, including the prescribing of glasses for soldiers; the ear, nose, and throat examination of all recruits in whom there existed a question as to their physical qualifications, as well as the treatment of such diseases and injuries; passing on the teeth and jaw conditions of recruits and treating of diseases and injuries incident thereto; the care and treatment of brain and head injuries.

The number of officers assigned on recommendation of this division from July 9, 1917, to November 30, 1918, was as follows:[5]

Ophthalmology	612
Otolaryngology	491
Neurosurgery (including those given special instruction)	230
Oral and plastic (including dentists)	280
Total	1,613

SPECIAL HOSPITALS.

In order to secure means for special surgical treatment for head cases, General Hospital No. 11, Cape May, N. J., was organized and equipped for the purpose. This hospital had a capacity of 750 beds and was completely equipped and staffed to meet any emergency for the class of cases represented by the various sections of the Division of Head Surgery.[6]

In addition to the special surgical treatment mentioned as afforded at this hospital, it was designated by the Reconstruction Division as a center for reeducation of the deaf.

A special base hospital (No. 115),[7] authorized by the Surgeon General for the care of head cases abroad, was mobilized at Cape May, N. J., June 11, 1918, and was embarked for overseas on August 14, 1918. This hospital was specially staffed and equipped to care for the class of cases represented by the Division of Head Surgery. It was located at Vichy, France, where, as a matter of fact, it at first functioned as a general hospital, but was designated just before the time of the signing of the armistice for the special cases for which it had been organized.

SUPPLY OF SPECTACLES.

At the beginning of the war no provision existed for supplying soldiers with spectacles. The officer in charge of the Section of Ophthalmology arranged for the testing for glasses, together with the other treatment of the eye conditions to be done by the ophthalmologists in charge at the various camp base hospitals. An optician, obtained through the selective draft, was on duty in each hospital as a member of the Medical Department.

Arrangements were made with certain wholesale manufacturers to supply glasses through post exchanges at fixed prices. This plan, which was not wholly new, worked very satisfactorily, but was open to the criticism that the soldier had to purchase his own spectacles. Later the Government issued the glasses as part of the soldier's equipment.[8]

THE SCHOOL AT FORT OGLETHORPE, GA.

In connection with general Medical Department instruction at Fort Oglethorpe and General Hospital No. 14, courses were organized for each of the sections in the Division of Head Surgery.

As the courses were organized, medical officers who elected were given opportunity to name the special course they wished to attend. They were then examined and only those who showed a well-founded knowledge of the subject selected were admitted to the special course concerned. At the completion of the course another examination was conducted to determine whether or not the student officers were to be retained on the register in the Surgeon General's Office as qualified for a branch of head surgery. No further account of those who failed to pass the final examination was taken by this division.

DISTRIBUTION OF OVERSEAS PATIENTS.

Because of a natural limitation of personnel in head surgery, it was necessary to congregate the returned injured soldiers in a limited number of hospitals or "centers." The final distribution of the cases as this applied to head surgery was published by the Hospital Division and was as follows:[9]

Eye:
  U. S. Army General Hospital No. 1, Williamsbridge, N. Y.
  U. S. Army General Hospital No. 2, Fort McHenry, Md.
  U. S. Army General Hospital No. 6, Fort McPherson, Ga.
  U. S. Army General Hospital No. 11, Cape May, N. J.
  Walter Reed General Hospital, Takoma Park, D. C.
  Letterman General Hospital, San Francisco, Calif.
Blind:
  U. S. Army General Hospital No. 7, Roland Park, Md.
Ear, nose, and throat:
  U. S. Army General Hospital No. 2, Fort McHenry, Md.
  U. S. Army General Hospital No. 6, Fort McPherson, Ga.
  U. S. Army General Hospital No. 11, Cape May, N. J.
  Walter Reed General Hospital, Takoma Park, D. C.
  Letterman General Hospital, San Francisco, Calif.
Deafness and speech defects:
  U. S. Army General Hospital No. 11, Cape May, N. J.
  U. S. Army General Hospital No. 41, Fox Hills, Staten Island.
Maxillofacial:
  U. S. Army General Hospital No. 2, Fort McHenry, Md.
  U. S. Army General Hospital No. 11, Cape May, N. J.
  U. S. Army General Hospital No. 40, St. Louis, Mo.
  Walter Reed General Hospital, Takoma Park, D. C.
Organic diseases of the nervous system:
  U. S. Army General Hospital No. 11, Cape May, N. J.
  Walter Reed General Hospital, Takoma Park, D. C.
Peripheral nerves:
  U. S. Army General Hospital No. 1, Williamsbridge, N. Y.
  U. S. Army General Hospital No. 2, Fort McHenry, Md.
  U. S. Army General Hospital No. 3, Colonia, N. J.
  U. S. Army General Hospital No. 6, Fort McPherson, Ga.
  U. S. Army General Hospital No. 11, Cape May, N. J.
  U. S. Army General Hospital No. 26, Fort Des Moines, Iowa.
  U. S. Army General Hospital No. 28, Fort Sheridan, Ill.
  U. S. Army General Hospital No. 29, Fort Snelling, Minn.
  Walter Reed General Hospital, Takoma Park, D. C.
  Letterman General Hospital, San Francisco, Calif.

Wounds or injuries of the skull or brain or spinal cord:
  U. S. Army General Hospital No. 2, Fort McHenry, Md.
  U. S. Army General Hospital No. 3, Colonia, N. J.
  U. S. Army General Hospital No. 6, Fort McPherson, Ga.
  U. S. Army General Hospital No. 26, Fort Des Moines, Iowa.
  U. S. Army General Hospital No. 28, Fort Sheridan, Ill.
  U. S. Army General Hospital No. 29, Fort Snelling, Minn.
  Walter Reed Hospital, Takoma Park, D. C.
  Letterman General Hospital, San Francisco, Calif.

A staff of specially qualified surgeons was assigned to each of these hospitals. The equipment of each, together with the general equipment (physiotherapy and reconstruction), was adequate to meet immediate surgical conditions; it also provided means for the care of convalescents, and shops, schools, and other facilities for education and reconstruction.

As the proper treatment of peripheral nerve cases embraced professional care involving more than one section, it was determined to put this under the supervision of a commission made up of representatives from general surgery, orthopedic surgery, neurosurgery, and neurology. On January 31, 1919, the Peripheral Nerve Commission[10] was appointed.

The function of this committee was to study all peripheral nerve cases and to prepare a report on their treatment for the action of the Surgeon General.

SECTION OF OPHTHALMOLOGY.

The Section of Ophthalmology was originally organized, as to personnel, in the Subcommittee of Ophthalmology of the Division of Surgical Specialties of the General Medical Board, Council of National Defense, and was transferred to the Division of Head Surgery after the organization of that division in the Surgeon General's Office. It continued so to function until the reorganization of the office, November 30, 1918, when the Division of Head Surgery, as stated above, with its constituted sections, became the Section of Head Surgery of the Division of Surgery.

OPHTHALMIC PERSONNEL RECORDS.

Very early the first set of indexed cards of all ophthalmologists assigned to duty in various general and base hospitals, or available for such assignment, was prepared from data collected by the Subcommittee of Ophthalmology (Council of National Defense) and was filed in the Surgeon General's Office. These cards were systematically corrected from time to time, the ratings being added or altered according to the reports received from hospital commanding officers, chiefs of sections, and inspectors, and information thus obtained was placed on file with the officer's papers in the Record Room of the Surgeon General's Office. In August, 1918, an entirely new set of cards was prepared, the ratings being checked to date, according to reports as noted above. In addition, there were then available the reports of the results of the examinations in the School of Ophthalmology, Camp Greenleaf, Fort Oglethorpe, Ga., furnished weekly by its director. Still later, corrections were made as the results of reports from the consultant in ophthalmology in the Surgeon General's Office, obtained by him on his various visits to those hospitals designated as eye centers. The officers assigned to overseas duty in evacuation and base hospitals were listed, with their ratings, and these ratings were forwarded in a special courier letter sent weekly to the senior consultant in ophthalmology, American Expeditionary Forces. Officers found to be unsuited to the special duties of ophthalmic practice who had been "held in ophthalmology" were released as soon as possible to the Personnel Division for other duty.

From the carefully kept records reasonably accurate information was constantly available, whereby the various requests for ophthalmologists could be complied with according to the duties required. For example, an officer competent in refraction work, but inexperienced in operative technique or clinical observation, was assigned, as far as possible, to the duty for which he showed proficiency. Should a request be made for a medical officer who combined with ophthalmology, otolaryngologic experience—and this was not infrequently the case—the assignment was made only after consultation with the officer of the Section of Otolaryngology.

TRACHOMA CAMPS.

The possibility of an outbreak of trachoma in the Army was taken into account and various recommendations were made on the subject by the Subcommittee of Ophthalmology, Council of National Defense.[a] At the request of the Committee of Publication of the council, a special chapter on this disease, its prevention and treatment, was incorporated in War Manual No. 3[4-b] Later this problem was investigated and reported upon.[11]

At this date, February 14, 1918, the new Manual of Instructions for Medical Advisory Boards,[12] contained a regulation to the effect that registrants with chronic conjunctivitis in districts where trachoma was common be most carefully studied. If the diagnosis of trachoma could not be excluded, the registrant was to be accepted for general military service in the deferred remedial group (Group B). Registrants with trachoma otherwise physically and mentally fit, with vision up to the standard for military service, would be accepted for service in the deferred remedial group. To expedite action, an additional memorandum[13] recommended that the methods of the Public Health Service be investigated, that a trachoma concentration camp be considered, that measures to prevent the return of trachoma subjects to the civilian population be devised, and that opportunities for establishing a differential diagnosis between true trachoma and other conjunctival lesions resembling the disease should be facilitated. A further memorandum suggested[14] Grayson Springs, Ky., Cerulean Springs, Ky., or Olympian Springs, Ky., as a suitable location for a trachoma concentration camp. No action being taken on this recommendation, a further memorandum requested authority for the utilization of the buildings and grounds at Fort Thomas, Ky., as a trachoma concentration camp.[15] This was approved by the Hospital Division on April 4, 1918. All these recommendations were disapproved by the War Department as inconsistent with plans already completed for other uses of the buildings at Fort Thomas. On April 15, 1918, a further memorandum was addressed to the Hospital Division, the object being to obtain authority for the location of a trachoma camp at Olympian Springs, Ky., and a memorandum to the Surgeon General of April 17, 1918, restated the recommendations already made.[16] These memoranda were again approved by the Surgeon General. After careful inspection and investigation of Olympian Springs, a report was submitted on April 22, 1918, in which it was urged that immediate action be taken to obtain this property for the purpose stated.[17] As frequent inquiries from the various camps and cantonments as to the disposition of trachoma cases continued to reach the Surgeon General, a memorandum was issued from that office, dated July 18, 1918,[18] directing that, until otherwise notified, men in the service with advanced trachoma, with pannus, scar tissue, induration of tarsus, and trachoma granules on the bulbar conjunctiva, be discharged on surgeon's certificate of disability, while cases of doubtful trachoma, showing rapid improvement, be retained for treatment, every precaution being taken to prevent the communication of the disease. In a final revision of the standards of physical examinations governing entrance into the Army, trachoma subjects were classified among those "who shall be unconditionally rejected for all military service."[19] The Section of Ophthalmology was then directed to write an opinion as to the disposition of trachoma cases found in various camps or reported from base and general hospitals. In a report rendered July 12, 1918, the following recommendations were submitted:[20]

---

[a] For an account of the prevention of trachoma in the Army camps, see the article by Col. Nelson M. Black, M. R. C., in the *Wisconsin Medical Journal*, Milwaukee, 1920, xix, 5-15.

> A few cases of trachoma have appeared at the various concentration centers of the United States military service, while in one camp only have the cases recorded as trachoma assumed proportions that would constitute a numerical menace; every case of trachoma must be so regarded until it can be placed in control and under treatment. Hence:
>
> 1. All men with undoubted chronic trachoma, pannus, scar tissue, induration of tarsus, and trachoma granules on the bulbar conjunctiva, as well as on the tarsal conjunctiva, should be S. C. D'd, and it should be recommended that such trachoma subjects report immediately on return to their homes to the nearest health authorities or to the officers of the Public Health Service for disposition and treatment.
>
> 2. All men with follicular trachoma, not advanced into the stage of chronic trachoma with lesions above summarized, and therefore amenable to comparatively rapid cure, should be sent to the base hospital for treatment, where every precaution to avoid the possibility of communicating the disease should be exercised.
>
> The treatment of these men should be undertaken by the Chief of the Subsection of Ophthalmology of the base hospital and submitted to the well-recognized mechanical (surgical) operative measures, followed by medicamental application until a cure results, when they may be returned to their units.
>
> Should, in any instance, the treatment prove ineffective at the end of a reasonable time, or the lesions of advancing chronic trachoma develop in spite of treatment, the subject should be S. C. D'd as before described.
>
> 3. All men with chronic conjunctivitis and secondary folliculosis, the so-called border-line cases, should be admitted to the base hospital, and be sent for treatment as before described.
>
> To summarize: The present regulations shall remain in force, with the addition that the S. C. D'd men shall carry with them a recommendation that they shall report, or be reported, to the health authorities, or the Public Health Service, and that cases admitted for treatment shall be submitted at once to approved methods of dealing with this disease, mechanical as well as medicamental.

These recommendations were approved by the Surgeon General and the Hospital Division, and adopted as the regulations governing the management of the trachoma cases in the United States Army.[21]

SPECTACLE GLASSES.

The standardization of spectacle lenses for use in the military service of the United States was begun by the Subcommittee of Ophthalmology, Council of National Defense. In September, 1917, these plans were matured and received the approval of the Surgeon General, the standard lens to be flat, round, and 40 mm. in size, and the frames of white metal of the best stiff construction. Requests for bids to supply such standard spectacle glasses to the camp base hospitals and general hospitals were mailed to seven optical manufacturing companies.

In November, 1917, the chiefs of the ophthalmic services in all the base hospitals were informed on the subject of the standard spectacle frames and lenses, with the specifications which had been decided upon, and where they could be obtained until the post exchanges, through which they were later furnished, were able to take their supply in hand.

On November 14, 1917, the bid of one of the competing optical firms was accepted by the Surgeon General, and this firm was so informed on November 27, 1917. On the same date a letter of instructions on the furnishing of soldiers with spectacle lenses [22] was transmitted to all division surgeons at the National Army and National Guard camps. This letter directed that arrangements be made through the base hospital post exchange, or a suitable camp post exchange, to furnish spectacles according to prescription by the Subsection of Ophthalmology, Section of Surgery of the Head of the Base Hospitals. The price at which they would be furnished by the optical company whose bid had been accepted was also stated as well as the price at which they were to be sold to officers and soldiers. The standard size of the frames and lenses was specified. To provide for the proper adjustment of the spectacle frames it was directed that an optician be selected from among the drafted men and assigned to duty in the Subsection of Ophthalmology of each base hospital.

This method of supplying glasses through the post exchanges at a fixed price remained in operation until March 13, 1918, when the Section of Ophthalmology took up the question of furnishing enlisted men with spectacles free of cost, and outlined the plan in a memorandum to the Surgeon General, which was approved on March 20, 1918. As the result of this recommendation, the following order was promulgated: [8]

> VII. During the present emergency lenses for the correction of visual defects, and suitable frames therefor, will, when prescribed by medical officers (or by civilian physicians employed under proper authority), be issued without charge by the Medical Department to all enlisted men who have been definitely accepted for the military service. They will not be issued to recruits who for any reason are about to be discharged from the service.
>
> The soldier's receipt for the lenses and frames will be taken by the issuing officer in each instance, and will be the medical officer's voucher for dropping them from his return of medical property.
>
> Should the lenses or frames be subsequently damaged, lost, or destroyed while in the soldier's possession and without fault on his part, they will be repaired or replaced without charge by the Medical Department. Should they be damaged, lost, or destroyed through fault on the part of the soldier, they will be repaired or replaced by the Medical Department, and the cost, repair, or replacement will be collected by stoppage against the soldier's pay.

The plans for supplying spectacle lenses to soldiers as part of their equipment were not completed until June 6, 1918, when a memorandum to the Supply

Division was forwarded by the Section of Ophthalmology, suggesting that a form letter of instructions be sent, through channels, to officers whose duty it was to prescribe glasses for enlisted men at the various posts, base, and general hospitals. This form letter was also to contain a list of the camps and cantonments, with notation in each case of the wholesale optical manufacturing companies best suited to furnish glasses under the provisions of the order named. In accordance with this recommendation, on June 7, 1918, by direction of the Surgeon General, a letter of instructions was sent to every medical and supply officer concerned. This letter also specified that glasses at 10 per cent increase above the wholesale price would be furnished to officers and their families and to nurses.[23]

On June 13, 1918, a complete classified list of all the camps and cantonments, together with the wholesale optical manufacturing companies best suited to supply glasses according to the regulations, was prepared. The Supply Division of the Surgeon General's Office sent this [24] to all officers concerned with the ordering of spectacle lenses in the Army, and informed the various optical manufacturing firms selected as to the exact territory each must be prepared to cover with the supply of glasses as prescribed and ordered.

While no spectacles other than those which conformed to the published specifications were issued, should an enlisted man desire to procure through the post exchange other types of frames, he was authorized to do so at such price as was in force at the time of the purchase.

The supply of glasses to those in the military service other than enlisted men was governed by a letter dated July 1, 1918. This was issued by the Chief of the Division of Surgery of the Head under the direction of the Surgeon General. It provided for the purchase of glasses for officers and others.[25]

As in the city of Washington there was no post exchange, and none nearer than Walter Reed Hospital, Takoma Park, D. C., Fort Myer, Va., or Camp Meigs, D. C., the following suggestion was made:

> In order that officers and their dependents, nurses, enlisted men and their dependents, and civil-service employees of the Government may be enabled to purchase glasses at 10 per cent above the wholesale price, as provided for through the medium of the post exchange in Form Letter No. 39, S. G. O., where such post exchange exists, it is recommended that the secretary of the Y. M. C. A. be requested that this organization shall act as the medium through which the purchase of glasses shall be made from the wholesale firm manufacturing the "issue glasses" purchased by the supply officer of the attending surgeon's office, in Washington.

This plan was approved and the Young Men's Christian Association gave ready cooperation.[26] The necessary letters of instruction and orders were issued, and the equipment, with a practical optician on duty, was housed in the Young Men's Christian Association hut at Ninth Street and Pennsylvania Avenue. This proved to be an excellent arrangement. The plan continued in operation until February 4, 1919.

The arrangements which have been described for the supply of glasses gave universal satisfaction.

OPTICIANS AND OPTICAL UNITS.

Plans for the utilization of practical opticians and optical units in the Medical Department of the Army were begun by the ophthalmic members of the Joint Committee (Committee on Surgery of the Head) of the General Medical Board, Council of National Defense, as soon as the Surgeon General authorized (August 15, 1917) the establishment of a special hospital of 1,000-bed capacity for surgery of the head in the American Expeditionary Forces.[7] The material and data collected and catalogued at this time were of great use later to the Section of Ophthalmology of the Surgeon General's Office.

Among the men drafted, or subject to draft, were many practical opticians. Letters from these men were received in large numbers, offering their services as opticians; other letters came from the manufacturing firms containing offers of men in their employ for the same duty. Although the regulations did not permit the induction of these men into the service as opticians, their names and requests were catalogued by the Section of Ophthalmology, and from this classified list it was possible later in many instances to supply the opticians required in the Subsection of Ophthalmology of the various base hospitals, and also in the organization of optical units.[7] A form letter was prepared and mailed to each optician who had offered his service as such, explaining that it would be accepted, if possible, whenever required.

An effort was made by optometrists individually and by optometrical organizations as such for recognition by the Medical Department. The offers were all carefully considered, but no change in the regulations, which contained no provision authorizing this, was made.

During the winter of 1917 and 1918 the chief of this section, while on duty on a tour of inspection in France, was ordered by the chief surgeon of the American Expeditionary Forces to make investigations as to the best methods of spectacle-lens supply for the American Expeditionary Forces. In his report it was pointed out that plans for such supply were already in the Surgeon General's Office, and that on order the necessary opticians and optical equipment could be furnished. On February 25, 1918, a base optical unit and eight auxiliary units (Units 1–8) were requested by cable.[27] They were mobilized at Camp Crane, Allentown, Pa., in March, 1918, and left the United States April 26, 1918, arriving in France May 4, 1918.

On September 4, 1918, a cablegram from the Headquarters of the American Expeditionary Forces reached the Surgeon General's Office, requesting that six additional optical auxiliary units, in personnel and equipment to correspond with those which had sailed April 26, 1918, should be sent to France.[27] Their organization was immediately begun. They, like those which had preceded them, were mobilized at Camp Crane, Allentown, Pa., in October, 1918, and sailed on November 12, 1918.

ARTIFICIAL EYES AND GLASS FOR ARTIFICIAL EYES.

In August, 1917, the Subsection of Ophthalmology, Council of National Defense, interested itself in the supply and manufacture of artificial eyes. It was learned that the glass used in the manufacture of artificial eyes had been obtainable chiefly from one source in Germany, and that the manufacture of this glass in the United States had not been attempted on account of the limited demand for it. As the result of considerable effort, samples of this glass were obtained. On September 6, 1917, the question of its analysis was taken up with the Bureau of Standards, Department of Commerce, and the matter referred to the glass specialist at the Pittsburgh laboratory of the bureau. At the request of this laboratory, samples of the glass were then sent it. For a number of months there followed a series of conferences, chiefly concerning the chemical problems involved, through letters and personal interviews between the Section of Ophthalmology and the Bureau of Standards, the Geo-Physical Laboratory, a selected number of firms dealing in artificial eyes, and a manufacturing glass company.

Ultimately, samples of the glass needed for the manufacture of artificial eyes were procured, as well as the finished product. While these eyes were by no means the equal in quality of the foreign article, they gave promise that had it become necessary to depend upon domestic production of artificial eyes additional experiments would have succeeded in developing a more suitable glass and one free from some of the objections which pertained to that which was first produced. As the Government was not obliged to depend upon glass manufactured in this country for this purpose, and as it was found that the supply of artificial eyes carried in stock by various dealers in the United States would suffice to meet the demand, further experiments along this line were discontinued.

A survey, made in part by the Council of National Defense, and in part by the Division of Finance and Supply of the Surgeon General's Office, revealed the sources from which these artificial eyes could be obtained. A large number were purchased and stored in the New York supply depot. A portion of this supply formed part of the equipment of the first optical unit which sailed on April 26, 1918.[28] After the establishment of the eye centers in this country—that is, when, in the late summer and fall of 1918, wounded were returning from overseas—on request of the Section of Ophthalmology, the Division of Supply and Finance of the Surgeon General's Office divided the remaining stock of artificial eyes among the hospitals designated as eye centers, namely, Walter Reed, Takoma Park, D. C.; United States General Hospital No. 2, Fort McHenry, Md.; United States General Hospital No. 11, Cape May, N. J.; United States General Hospital No. 6, Fort McPherson, Atlanta, Ga.; United States General Hospital No. 26, Fort Des Moines, Iowa; and Letterman General Hospital, Presidio of San Francisco, Calif. In so far as possible, soldiers returning from overseas who required artificial eyes, or operations on the sockets in order that the artificial eyes might be adjusted, were sent to one of the hospitals named. If this were not expedient, the Division of Finance and Supply, on request from the Section of Ophthalmology, authorized, through channels, the officer in charge of the Ophthalmic Service of the hospital to which a soldier had been assigned to purchase the needed artificial eyes, at a fixed price, from the nearest civilian shop having such eyes in stock. In this manner an adequate supply was always at the disposal of the various ophthalmic services of the base and general hospitals of the country.

INSPECTIONS.

According to the plan of organization of the base hospitals of this country, there was authorized and established in each one of them a section of Surgery of the Head in the Surgical Service, including a Subsection of Ophthalmology. These sections and their component subsections were systematically inspected by officers detailed for that purpose from the Division of Surgery of the Head.

Practically all of these subsections were visited once, and many of them twice, during a period beginning in September, 1917, and ending in July, 1918.

The needs of the service as to equipment and personnel were thus ascertained and were then provided for on recommendation from the inspecting officer. This systematic inspection proved to be one of the most effective measures for correcting to date the record cards on file in the Surgeon General's Office of those officers who were "exempt to ophthalmology." The inspections also included one in France and England, which began early in November, 1918, and ended February 13, 1918.[29] Its purpose was to observe the methods employed by the English and French Medical Corps, with special reference to ophthalmology, otolaryngology, maxillo-facial surgery, neurological surgery, and the medical care of the aviator. During this inspection in France all the base hospitals except three at that time in our own service, four British base hospital areas, and one French hospital sector from its base to the front, were inspected. In England, several general hospitals, one special hospital devoted to plastic surgery, and St. Dunstan's Hotel were visited.

A complete report of the work and the conclusions arrived at, with recommendations, was submitted to the chief surgeon, American Expeditionary Forces, and to the Surgeon General. From the eye standpoint the chief recommendations were: A standard eye equipment for all hospitals in the American Expeditionary Forces, as already planned in the Surgeon General's Office, and separate wards for the care of eye patients, one chief eye center, in the sense of a hospital devoted to surgery of the head; the establishment of eye centers to care for the major eye cases of given hospital areas; the assignment of competent ophthalmic surgeons to hospitals to be erected in the advanced areas; the organization of optical units in various zones, one central optical shop for the supply of spectacle lenses; and the appointment of a director or consultant in ophthalmology in the American Expeditionary Forces.[29]

EDUCATIONAL AND LITERARY ACTIVITIES.

Soon after the establishment of the Section of Ophthalmology, a course of lectures on ophthalmic practice, to be given in camp base hospitals and at medical officers' training camps, was outlined. The detailed account of this type of instruction will appear in the volume on education and training. Although in general this plan did not result in any notable special achievement in ophthalmic teaching, in several base hospitals, notably at Camp Custer and Camp Lewis, much attention was devoted to this subject, and the courses put at the disposal of the officers on duty in the Subsection of Ophthalmology were productive of good results.

The chief advance in training ophthalmologists for service in the Medical Corps of the Army was coincident with the establishment of the School of Ophthalmology, Medical Officers' Training Group, Camp Greenleaf, Fort Oglethorpe, Ga. Prior to its organization a school of this character had been in contemplation for a considerable period of time, and was the subject of many conferences between the Section of Ophthalmology and the officer in charge of medical instruction at Camp Greenleaf. From June 15 to June 30, 1918, a preliminary survey was made of the available buildings and clinical material, the possible courses of instruction in ophthalmic work and in cooperation with other schools already established or in process of establishment, the laboratory facilities, the staff required, and the standards for admission. The recommendations, as a result of this survey, incorporated in a report which was submitted to the Surgeon General and to the commandant of the camp, were approved.

On July 23, 1918, the Surgeon General ordered the organization of the ophthalmic instruction, with the collection of the necessary equipment and oversight of the alterations required in the building assigned for the purpose at the school. This building was officially known as Ward 30, Division A, of United States General Hospital No. 14.[30] On August 7, 1918, preliminary lectures and demonstrations were begun, and on August 12, 1918, the formal opening of the ophthalmic school took place.

This School of Ophthalmology was organized and put into operation for the purpose of training ophthalmologists who had entered the service as such and had been assigned to the Medical Officers' Training Camp for instruction. It afforded student officers, even though they had in civilian life devoted long periods of time to eye work, an opportunity for postgraduate ophthalmic instruction which proved to be of the utmost service. It also permitted all those who were engaged in this work, either as instructors or as student officers, to approach their duties from the military standpoint. In so far as possible, emphasis was placed on instruction which would fit the student officers for ophthalmic services abroad. The school continued in operation until December 31, 1918.

The literary and educational activities of the Section of Ophthalmology other than those already described consisted in the preparation of (*a*) camp and war manuals;[4] (*b*) the delivery by order or authorization of various addresses and lectures;[31] and (*c*) the presentation before scientific societies, or in medical schools, of various papers pertaining to ophthalmic war surgery and practice.[31]

CONFERENCES.

In addition to the daily routine, conferences were held, as occasion required, between the Chief of the Division of Surgery of the Head and other divisions of the Surgeon General's Office and the Section of Ophthalmology.[32] Conferences in relation to the trachoma problem have already been mentioned. Special reference may be made to the following: (1) With the Division of Aeronautics on the visual requirements of aviators at reexaminations (Oct. 11, 1918); (2) with the Sanitary Division on ocular conditions to be recorded in the examinations of soldiers at the time of demobilization, on the revision of the ophthalmic diagnosis for the code book, on the classification of ophthalmic operations, on the ocular examination of registrants, on forms for taking ophthalmic histories; (3) with the Statistical Division on the ophthalmic diseases on which statistical data were desirable; (4) with the Medical Section of the Bureau of Railway Administration on the practical methods of testing color blindness; (5) with the Finance and Supply Division on the distribution and purchase of artificial eyes, on the equipment for eye centers, and on the instruments and drugs for overseas hospitals, as well as for newly established hospital centers in this country; (6) with the Hospital and Personnel Division on the assignment of contract ophthalmic surgeons and the distribution of eye cases from overseas; (7) with the Legal Department on the percentage of disability to be allowed for the loss of one eye, the other remaining perfect; (8) with the Library Division of the Surgeon General's Office on the history of ophthalmology in the war. The Chief of the Division of Surgery of the Head participated in numerous conferences, in many of which ophthalmic questions of importance were discussed and decided; for example, in reconstruction, on the standardization of the professional reports for base hospitals, on instruction on general hospitals, and on the regulations for selective-service registrants.

SPECIAL HOSPITALS FOR EYE CENTERS.

As described in the History of the Division of Surgery of the Head, General Hospital No. 11, Cape May, N. J., was organized and equipped for the special surgical and other treatment of "head cases," and therefore included an eye service, with a carefully selected personnel, and later became one of the eye centers.

A special base hospital for the care of patients overseas who would require expert care from the standpoint of opthalmology, otolaryngology, neurological surgery, and maxillofacial surgery, authorized by the Surgeon General August 15, 1917, was mobilized at Cape May, N. J., on June 11, 1918. Collecting the equipment and organizing the medical and nursing personnel of this hospital became a particular duty of members of the Section of Ophthalmology. This hospital, listed as Special Base Hospital No. 115, was embarked for overseas on August 14, 1918; its work is described in the report of the senior consultant in ophthalmology for the American Expeditionary Forces.[33]

Soon after wounded from abroad began to arrive in this country, it became necessary, in order adequately to furnish the means of supplying special types of treatment, to select a number of hospitals or centers for this purpose. As the result of consultations between the Section of Ophthalmology, through the Chief of the Division of Surgery of the Head, and the Hospital Division, six hospitals, namely, United States Army General Hospital No. 1, Williamsbridge, N. Y., United States Army General Hospital No. 2, Fort McHenry, Md.; United States Army General Hospital No. 6, Fort McPherson, Ga.; United States Army General Hospital No. 11, Cape May, N. J.; the Walter Reed Hospital, Takoma Park, D. C.; and Letterman General Hospital, San Francisco, Calif., were designated as eye centers, and to them, as far as possible, soldiers with wounded or diseased eyes, and especially those requiring blepharoplastic surgery, were assigned.[9] Lists of the wounded as they reached this country, with the overseas diagnosis of each soldier, were submitted to the various divisions and sections of the Surgeon General's Office and for each a hospital was designated according to his medical and surgical requirements. In accordance with this plan, the majority of soldiers with eye injuries or diseases were sent to one or other of the eye centers. Whenever, for geographical or other reasons, such assignment was not deemed advisable, the wounded soldier was transferred to a base or general hospital not specifically designated as an eye center, but with ophthalmic surgeons on duty capable of giving the necessary attention. Further, to meet conditions better, several hospitals were selected as auxiliary eye centers; for example, that at Camp Lewis; United States Army General Hospital No. 26, Fort Des Moines, Iowa; and United States Army General Hospital No. 28, Fort Sheridan, Ill.

The ophthalmic staffs of the eye centers and the auxiliary eye centers were selected so that they should include medical officers skilled in ophthalmic surgery, and particularly in blepharoplastic work.

CONSULTANTS.

The question of the appointment of consultants for the various general and special medical and surgical divisions and sections of the Surgeon General's Office was the subject of frequent conferences with the Surgeon General. The plan of designating consultants, similar to the one in operation in the Medical Service of the British Expeditionary Forces, as it had been observed by the officers sent on an inspection tour in France and England, to which references have been made, was recommended in their report, especially for the sections of the Division of Surgery of the Head. It was particularly urged after the organization of a staff of consultants by the chief surgeon, American Expeditionary Forces, and the receipt of reports indicating the value of such assignments. Naturally, the need for consultants in the hospital service of this country was not so insistent as it was overseas, especially after the active participation of American soldiers in the combat areas, although, in point of fact, officers inspecting camp hospitals on this side were not infrequently requested to assume the functions of consultants by the chiefs of various services and by the hospital commanding officers. The need of consultants became more evident as the wounded from overseas began to arrive in this country and to be distributed, as before described, to groups of selected hospitals. Accordingly, all of the eye centers, with the exception of Letterman General Hospital and the auxiliary centers, were systematically visited as occasion required, and the work of a consultant was carried out, as requested, by the hospital commanding officers, chiefs of sections, and subsections.

After the appointment of a senior consultant in ophthalmology in the American Expeditionary Forces, the Section of Ophthalmology, Surgeon General's Office, and the office of the ophthalmic consultants of the American Expeditionary Forces kept in communication by means of correspondence and a weekly courier letter.[34] In this manner, requisite additions to the overseas ophthalmic personnel and to the ophthalmic equipment were ascertained, and an endeavor was made to supply them. Moreover, the ratings of ophthalmic surgeons designated for overseas hospitals were forwarded as soon as their assignments had been made, thus putting the senior consultant in ophthalmology, American Expeditionary Forces, in possession of information by which he might be guided in their selection for special duties. In brief, as far as possible, an effort was made to correlate the work of the Section of Ophthalmology of the Surgeon General's Office and that of the office of the ophthalmic consultants of the American Expeditionary Forces.

ASSIGNMENTS.

The various assignments, transfers, and releases from the beginning of the work of the Section of Ophthalmology until January, 1919, may be classified as follows:

To Medical Officers' Training Camps	368
To base, port, post, and general hospitals in this country	493
To overseas hospitals and units	276
Transferred to other services	360

Naturally there is a certain amount of duplication in these figures. Thus, officers assigned to training camps may be included among those assigned to hospitals or to overseas units. The total number of ophthalmologists assigned to duty during the war was 612. Of this number, 150 were on duty in France on December 31, 1918.[5]

SECTION OF OTOLARYNGOLOGY.

The Section of Otolaryngology was organized on August 7, 1917.[5] The first activity of the section was to continue the work already started by the Subcommittee of Otolaryngology of the Council of National Defense and to apply the results of this committee's labors. The chief activity of this committee had consisted in sending out questionnaires to specialists in otolaryngology, filing and indexing them when they were returned, distributing the application blanks for the Medical Reserve Corps of the Army to its specialists, and advising on the classification of the applicants on the receipt of their papers in the Surgeon General's Office. By means of the questionnaires, a list was made of the otolaryngologists of the country who were ready for immediate or deferred service. In most cases, the questionnaires gave sufficient data for classifying and rating the applicants. Where there was doubt, application was made to members of the profession who had been selected to act as State consultants.

The personnel in otolaryngology of the various camp hospitals was selected from the physicians who answered the questionnaires. During the war period, securing adequate personnel and placing it in a manner satisfactory to the service and to the individuals concerned was the main function of the Section of Otolaryngology. In order to bring this about, much correspondence was carried on with otolaryngologists seeking information regarding the military service, and many consultations were held in the Surgeon General's Office with physicians whose desire to do their part brought them to Washington for advice.

In May, 1918, a circular letter was sent to 100 otolaryngologists who, a year before, had expressed their willingness to enter the Medical Corps at a later date, should their services become necessary.

Coincident with the enrolling and assigning of otolaryngologists to the base hospitals in this country, a tentative list of assignments for base hospitals abroad was drawn up. On August 30, 1917, a medical officer was appointed consultant in otolaryngology to the line of communications; on April 1, 1918, he was appointed senior consultant and director of ear, nose, and throat surgery in the American Expeditionary Forces.

A special building for the Section of Surgery of the Head, for use in base hospitals in this country, was designed jointly by the Section of Otolaryngology and the Section of Ophthalmology. (For description, see Vol. V, Military Hospitals, United States.)

A working set of instruments for the Section of Otolaryngology was prepared and instruments were supplied to the base hospitals. Later this list was modified, extended, and standardized. An instrument list for a special head hospital abroad was drawn up also; the Section of Otolaryngology took its proportionate part in planning the special hospital building for the head hospital abroad.

In October, 1917, the chief of the section made an inspection trip to Camp Devens, Camp Upton, Camp Mills, and Camp Dix, and in late October, 1917, he made one of a party of four for a two months' tour of observation overseas. This party went in the interests of the surgical specialties of the head and the medical care of the flier. They were given ample opportunities to study the manner in which the specialties were managed in the English and French Armies. In addition, they visited the majority of the American base hospitals in France. An extensive report of their observations was rendered to the Surgeon General, with recommendations.[36]

In June and July, 1918, the chief of this section made an inspection of the Section of Surgery of the Head at Camps Lee, Jackson, Hancock, Wheeler, Sheridan, Beauregard, and Shelby.

In connection with the examination of the registrants of the draft, the standard of hearing for admission to the Army was revised, and the tests for malingerers were amplified. Later on, the regulations for medical advisory boards, as far as they concerned otolaryngology, were also revised and rearranged.

A committee was appointed to investigate ear protectors. The results of this investigation were submitted to the Surgeon General in March, 1918.[37] A brief account of the work on reeducation of the deaf is given in Chapter XIX, Division of Physical Reconstruction. A full account will appear in the volume on Physical Reconstruction.

A manual of abstracts of the literature bearing on otolaryngology in the war was compiled in this section and published as War Manual No. 8.[4-e] In addition, a monthly journal was prepared and issued by the section.[38]

The School of Otolaryngology of the Medical Officers' Training Camp at Camp Greenleaf, Fort Oglethorpe, Ga., began its work on May 8, 1918, with 19 pupil officers, and closed in January, 1919, 90 student officers having taken instruction in the school, 57 of whom were rated as qualified otolaryngologists.[39] A collection of anatomical specimens (supplied by individual officers representing this specialty) and an abundant supply of instruments and other teaching paraphernalia constituted the equipment of the school, which filled an important place in rating men in the specialty of otolaryngology and in acquainting them with the modern methods of diagnosis and treatment.

By arrangement with the commanding officer of the medical officers' training camp, all students in the school who had completed six weeks' military training were allowed to give their entire time to professional work. The course of instruction was arranged on a four-weeks basis.

August 15, 1918, a form for the monthly report of otolaryngological operations was distributed to the various general, base, and post hospitals. By this means, operations were checked and tabulated. The forms became a part of the permanent records of the Surgeon General's Office. From these reports the following table is constructed.

Table of operations from returns available March 1, 1919.

Mastoidectomy (simple)	2,175
Mastoidectomy (complete exenteration or radical)	72
Meningitis (deaths complicating mastoid disease)	22
Brain abscess (number of cases)	15
Tonsillectomy	11,646
Tonsillectomy and adenoidectomy	2,396
Adenoidectomy	584
Submucous resection of the septum	3,246
Peritonsillar abscess	1,199

On September 12, 1918, six otolaryngologists were sent overseas as a unit. The members were unattached, in order to be available for quick assignment. November 21, 1918, a second otolaryngological unit was selected and was awaiting orders.

Beginning with October, 1918, a duplicate of the record of each otolaryngologist assigned to duty overseas or to an organization destined for such service was sent by weekly courier to the senior consultant in otolaryngology, American Expeditionary Forces, for his information and guidance.

For some time after the armistice, the activities of the Section of Otolaryngology were concerned mainly with the release, retention, or reassignment of its personnel, and the collection and tabulation of historical data. In order to obtain the latter, circular letters were sent to all the general, base, and post hospitals. Besides maintaining a minimum personnel at the various hospitals, the staff of the special hospitals designated to receive head cases was increased and strengthened.[40]

Tabulation of personnel.[40]

June 30, 1918:	
The number of otolaryngologists on duty in this country at camp base hospitals, general hospitals, posts, and special hospitals	213
Number of otolaryngologists assigned to duty overseas, plus those already overseas	120
Number of otolaryngologists available for assignment	58
November 23, 1918:	
Overseas—	
Base hospitals	120
Evacuation hospitals	37
July replacements	2
Unassigned	6
Total	165
Under orders for overseas—	
Base hospitals	45
Evacuation hospitals	22
October and November replacements	48
Total	115

November 23, 1918—Continued.

Released—	
Administration	9
Aviation	49
Field or general service	128
Honorably discharged	22
Died	4
Total	212
In service or under orders United States Army—	
Cantonments, base hospitals	159
Cantonment camps	6
Hospitals and forts	64
Training camps	15
Total	244
Total personnel of section during war:	
Officers not now in active service (released, discharged, died, etc.)	212
Total officers in active service	524
March 18, 1919: Otolaryngologists on duty in this country	143

SECTION OF BRAIN SURGERY.

As noted in the beginning of this chapter, a subcommittee on brain surgery was organized within the General Medical Board of the Council of National Defense, and, along with other subcommittees involved in surgery of the head, was transferred to the Surgeon General's Office with the organization therein of the Division of Head Surgery.[1]

At the inception of the idea in the Council of National Defense circular letters were addressed to all the principal hospitals and universities of the country, requesting them to submit the names of all surgeons available for duty as brain surgeons or capable of becoming such after intensive training. Questionnaires as to training and qualifications were then submitted to the men named. There were also organized throughout the country advisory committees, consisting of prominent neurologists, as referees in relation to the names of candidates submitted from their neighborhoods. In addition, there was organized a central advisory committee, made up of the leading brain surgeons of the country.

As the number of qualified brain surgeons was limited, neurosurgical schools of instruction were established in Philadelphia, New York, Chicago, St. Louis, and later at Fort Oglethorpe, Ga.[41] The course of instruction consisted of lectures and demonstrations in the anatomy, physiology, and pathology of the central nervous system, with surgical and neurological clinics. The course lasted 10 weeks, and the number of students at each course numbered about 30. The medical schools and hospitals of the cities in which the instruction was given were most generous of their facilities in the furtherance of this enterprise. At Philadelphia and New York, three courses of instruction were given; at Chicago and St. Louis, one; while the Oglethorpe school had only begun to function when the need ceased. From the questionnaires submitted, and after selection through the advisory committee, about 250 officers were retained for the Brain Surgery Section out of about 1,000 names submitted from the hospitals and medical schools. A manual,[4-c] compiled in the Surgeon General's Office from the leading authorities and from the recent abstracts of foreign and domestic literature on war surgery of the nervous system, was subsequently used as a textbook at the neurosurgical schools. A second neurosurgical manual,[42] more elaborate and comprehensive than the first, was published and distributed in the spring of 1919.

At the suggestion of the central advisory committee, a neurosurgical laboratory was established at Baltimore, Md. At this laboratory an exhaustive research into the infective processes of the central nervous system was conducted. A thorough test of the action of the chlorine antiseptics upon nerve tissues and also an investigation into drainage of the subarachnoid space were made.

Each Red Cross hospital still in this country was requested to assign two members of its surgical staff for special instruction in the neurosurgical schools. At this time it was hoped that a practical school might be established in France, to which the members of hospital units already overseas could be assigned, but this was not possible. By October, 1917, the first class from the first school at Philadelphia had graduated 32 officers.

In addition to the selection, training, and assigning of personnel, the Section of Brain Surgery, in conjunction with the Section of Maxillofacial Surgery, selected and arranged for manufacture of 200 sets of major operating-room equipment for brain, plastic, and oral surgery. These sets were made up of the instruments that had been found available through the Council of National Defense and were destined to be supplied to every base, evacuation, and mobile hospital.

Following a trip of inspection made by the Chief of the Section of Brain Surgery to the war hospitals of Canada, in December, 1917, authority was requested to establish another research laboratory at the University of Michigan for the study of peripheral nerve injuries.[43] At this laboratory a large number of experiments were performed on animals. The various methods of surgical nerve repair were tried out and regeneration through various grafts was studied. It was at this laboratory also that the advantage of alcohol injections for the prevention of neuromata was brought out.

As the various classes were graduated from the neurosurgical schools, the members were assigned to duty in the base hospitals, but were available for any neurosurgical work that might develop.

The base hospitals and evacuation hospitals organized in the Surgeon General's Office included in their personnel two officers assigned from this section. There were also sent to France in the summer of 1918, 10 officers who constituted Neurosurgical Team No. 1.[44] When the armistice was signed, about 190 officers from this section were on duty with the American Expeditionary Forces.

With the beginning of the influx of wounded soldiers from France, certain hospitals throughout the country were designated for special care for neurosurgical cases.[45] These were: U. S. Army General Hospital No. 11, Cape May, N. J.; Walter Reed General Hospital, Takoma Park, D. C.; U. S. Army General Hospital No. 1, Williamsbridge, N. Y.; U. S. Army General Hospital No. 2, Fort McHenry, Md.; U. S. Army General Hospital No. 3, Colonia, N. J.; U. S. Army General Hospital No. 6, Fort McPherson, Ga.; U. S. Army General Hospital

No. 26, Des Moines, Iowa; U. S. Army General Hospital No. 28, Fort Sheridan, Ill.; U. S. Army General Hospital No. 29, Fort Snelling, Minn.; Letterman General Hospital, San Francisco, Calif.

To each hospital was assigned an officer from the Section of Brain Surgery, who was made Chief of the Neurosurgical Service. In addition, an orthopedic surgeon and a neurologist were assigned to each hospital on the staff of the Surgical Service.

The majority of neurosurgical cases among returned soldiers were peripheral nerve cases. On January 29, 1919, the Surgeon General appointed a Peripheral Nerve Commission[10] to correlate and study these cases.

Under the advice of the Peripheral Nerve Commission, the Section of Brain Surgery printed and distributed the Peripheral Nerve Register.[46] Every peripheral nerve case was examined and studied according to this register and duplicate copies thereof were furnished to this section in the Surgeon General's Office. Thus, it was hoped that from the uniform data of a large number of cases a real contribution might be made to the study of peripheral nerve injuries. The final study of these cases being in the hands of the Peripheral Nerve Commission, the Section of Brain Surgery was abolished during the summer of 1919.[47]

SECTION OF PLASTIC AND ORAL SURGERY.

The preparations made by the Surgeon General for the care of injuries of the face and jaws during the late war were based upon observations regarding these injuries in the armies of the Allies and upon the best experience in civil practice of our own workers in this field.

Wounds of the face and jaws attracted particular attention from the beginning of the World War, not only on account of the disfigurement which they cause, but even more from the difficulty that was at first encountered in dealing with them. The special difficulties met with in their treatment, which differentiated them somewhat from other war injuries, arose from the attitude which regarded dentistry and surgery as two distinct and separate professions. The surgeon is not technically trained to splint fractures of the jawbones, yet early proper fixation is one of the most important points of the treatment. The dentist as such is not trained to care for the wounded tissue beyond fixation of the bones, yet repair of the soft tissues and proper drainage may be equally important. The earlier literature of these injuries in the recent war shows the great ingenuity manifested in devising fixative and corrective appliances for overcoming deformities that were largely due to lack of early treatment. As the means for handling these cases became better organized, attention was directed more to the surgical side of this special problem, until at the time of entry of the United States into the war the trend of thought of practically all authorities led to the conclusion that a definite plan of treatment for face and jaw injuries should be initiated at the earliest possible moment after receipt of the wound.

The two fundamental principles, therefore, upon which was based the preparation for the work of plastic and oral surgery by the Surgeon General of the Army were: (1) That the work could be carried out to its highest efficiency only by close cooperation of the surgeons and dental surgeons, and (2) that proper treatment should be instituted early and be continuously carried out on systematic lines. To carry out the designs of the Surgeon General it was necessary to have a large personnel, both surgeons and dental surgeons, who had received some special instruction in the general plan proposed, so that teams would be available in every advanced, intermediate, and base hospital to which the wounded would be brought. An efficient standard equipment was hardly of secondary importance.

Failure of realization of these plans to the fullest extent was not due to want of cooperation of the medical and dental professions, either in civilian life or in the Army, but to the exigencies of war. Where the plans actually fell short, disaster was averted by the splendid spirit of the personnel, who at any time and anywhere made ingenuity and enthusiasm compensate for material and conveniences when either or both of the latter were lacking.

The organization of the Section of Plastic and Oral Surgery began early in July, 1917, by the Joint Committee on Head Surgery, Council of National Defense, with the approval of the Surgeon General.[1]

The province of the plastic and oral surgeon was then defined as the care of injuries and surgical diseases of the mouth and its essential structures, including the bony framework and soft tissues of the face, and also of the neck when the major part of the injury is situated above the clavicle, with the exception of certain injuries and surgical diseases coming within the province of the ophthalmologist, the otolaryngologist, and the brain surgeon.

It was at once recognized that comparatively few men working in general surgery were familiar with the use of the various mechanical means which had been developed by the dental profession for the retention of jaw fractures. On the other hand, the training of the ordinary dental surgeon did not fit him for doing major surgical operations. To meet this situation, the following plan was formulated: To secure the services of the general surgeons of large experience, accustomed to doing plastic and bone surgery, and to correlate each with a dental oral surgeon. In this way, the individual maxillofacial case would be given the benefit of the skill and the knowledge of both professions.

As a beginning in the securing of personnel, letters were sent out to over 200 of the more prominent surgeons, asking for suggestions as to individual men whose training and practice were such as to make them especially fitted for the Section of Plastic and Oral Surgery. At the same time, inquiries were started as to available dental oral surgeons. From replies to these letters and from other sources, the names of surgeons and dental surgeons who could possibly qualify for the work were obtained. To these surgeons and dental surgeons letters were sent outlining the proposed plans and urging cooperation, together with questionnaires to be filled out and returned. The dental personnel for this work was selected, of course, with the cooperation of the Dental Section, and frequent consultations were held by the chiefs of the two sections concerned on all matters affecting both. In this manner, by the end of 1917, 147 surgeons and 117 dental oral surgeons had been selected and classified for this work.

In setting out to the prospective surgeons the field covered under the head of plastic and oral surgery, it was emphasized that the commanding officer or director of each hospital might delegate such other work to the surgeon in charge of oral surgery as he might see fit, so that a man taking up this work would not necessarily be limited to the particular field.

An important feature of the preparation of surgeons and dental oral surgeons for handling war injuries was to make available to them the literature pertaining to the subject. A complete survey of the current American and foreign literature was therefore made in the Surgeon General's library; abstracts of the principal articles were made, published from time to time in *The Military Surgeon*, and distributed in the form of reprints to the men interested. Time did not permit a full exposition of the subject in a special manual, and it was therefore decided to incorporate much of this material in a new Surgery and Diseases of the Mouth and Jaws,[4-d] which was designated as the official textbook of the section and placed in every hospital at home and overseas. New articles from the literature were abstracted as they appeared, and published in the *Review of War Surgery and Medicine*[42] and the *Survey of Head Surgery*, issued monthly by the Surgeon General's Office and distributed to the personnel.[38]

In order to correlate the functions of the surgeon and the dental oral surgeon in this work, to afford a review of the anatomy, of the operative surgery, of the literature, and, for the dental surgeon, the various methods of splinting, it was decided to conduct, under the supervision of the Surgeon General, short, intensive courses of instruction in certain civilian medical and dental schools for officers assigned to the section.[48] These courses were conducted by the staffs of the schools chosen, supplemented by teachers from the neighboring schools. All of the teaching in these courses was under the direct supervision of the section, and the general plan, with the allotment of time to each subject, was designated by the Surgeon General's Office. In each school an outline of the lectures and laboratory demonstrations was taken, transcribed, and forwarded to the Surgeon General. Complete reports as to proficiency and aptitude of individual officers were sent in at the completion of each course. In this way a very fair idea was obtained of individual ability, and men who did not prove suitable for the work were dropped from the section. The courses varied in length from three to six weeks, and covered a period from October 15, 1917, to March 30, 1918. The following schools were selected for these courses: Washington University, St. Louis; University of Pennsylvania, Philadelphia; and Northwestern University, Chicago.[49]

The number of officers who attended the courses follows:

St. Louis, 92 medical officers; 41 dental officers.
Philadelphia, 43 medical officers; 48 dental officers.
Chicago, 29 medical officers; 34 dental officers.

About 14 per cent of these men were lost by the Section of Plastic and Oral Surgery for various reasons, among them being lack of adaptability for this special work, transfer to other divisions of the medical service through military exigencies, and physical disability.

In August, 1918, plans were formulated for four weeks' courses of instruction in plastic and oral surgery to be given as part of the instruction at the Medical Officers' Training Camp, Camp Greenleaf, Ga. Two courses were given, the first ending November 16, 1918, and the second, December 14, 1918. The signing of the armistice rendered unnecessary any further plans along these lines.

While awaiting final detail to units for overseas service, the officers retained by the Section of Plastic and Oral Surgery, after completing their special courses of instruction, were assigned either to medical officers' training camps or to temporary duty in camp base hospitals. It was quickly realized that in this country there was little of the special maxillo-facial surgery to be done, and these officers for the most part were given such other work as the commanding officer deemed advisable. The dental officers, of course, were kept busy in the camps with the regular dental work.

With the organization in the Surgeon General's Office of the various base and evacuation hospitals and other units for overseas service, the call came for personnel in plastic and oral surgery, and to each unit were assigned one surgeon and one dental oral surgeon who had received the special training to fit them for this work. In addition to the regular base and evacuation hospitals, 10 special oral units were organized, each consisting of two surgeons and two dental oral surgeons, and sent overseas on March 31, 1918.[50]

Base Hospital No. 115, organized as a special head hospital, and including in its personnel four surgeons with special training in plastic and oral surgery, and two dental oral surgeons, together with special equipment for caring for face and jaw injuries, was mobilized for overseas service on June 30, 1918.

This section worked continuously upon the selection, simplification, and standardization of instruments and equipment to be used by the officers assigned to overseas hospitals. Both on general surgical principles and upon facts gleaned from the war experiences of others, it was recognized that if the jaw cases could receive early, effective treatment, much suffering, much convalescent time, and not a few lives could be saved, and every effort was made to place properly trained personnel in the most advanced operating stations, provided with proper equipment for instituting early care of the cases, including apparatus for temporary fixation of fractures.

In anticipation of the return of overseas wounded to the United States in April, 1918, plans were formulated whereby certain hospitals in this country were prepared with the proper special staffs and equipment to receive the various classes of cases. Arrangements were made for the prompt classification and evacuation of cases from ports to these hospitals. It was provided that all cases of disease and injury of the face, jaws, and neck should be sent to General Hospital No. 11, Cape May, N. J. During the last three months of 1918, cases of maxillofacial injury began to arrive from overseas and were sent to this hospital. It soon became evident that one hospital for the care of these cases would be inadequate, and by February, 1919, the following hospitals were designated as maxillofacial centers:[51] Walter Reed General Hospital, Takoma Park, D. C.; General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 11, Camp May, N. J. April 1, 1919, General Hospital No. 40, St. Louis, Mo., was added to the list, and in June, 1919, the service at General Hospital No. 40 was transferred to the post hospital, Jefferson Barracks, Mo. At each of these hospitals the service consisted of a chief of maxillofacial service, a number of ward surgeons and surgical assistants, and several dental surgeons and prosthetists. Of slightly over 800 cases of maxillofacial injury received in these and other hospitals from overseas, 374 were still under treatment on June 30, 1919, at Walter Reed General Hospital, General Hospital No. 2, and Jefferson Barracks. Shortly afterwards the remaining cases at General Hospital No. 2 were transferred to Walter Reed General Hospital and to the post hospital, Columbus Barracks, Ohio. By June 30, 1920. the number of cases under treatment was reduced to 94.[51]

An important feature in connection with the care of maxillofacial injuries was the preparation of special records in the form of drawings, photographs, plaster and wax models, which, when completed and assembled, were sent to the Army Medical Museum. At the special hospitals mentioned a complete staff of artists, photographers, and wax modelers were assigned by the Surgeon General to carry on this work.

With the organization of the staffs and equipment in the general hospitals designated to care for maxillofacial injuries from overseas, the administrative functions of the Section of Plastic and Oral Surgery in the Surgeon General's Office practically ended. One officer was retained in a consultive capacity.

PERSONNEL.[a]

(April, 1917, to December, 1918.)

Lyster, T. C., Brig. Gen., M. D., chief.
Parker, Walter P., Col., M. C., chief.

de Schweinitz, G. E., Col., M. C.
Black, Nelson M., Lieut. Col., M. C.
Blair, V. P., Lieut. Col., M. C.
Frazier, C. H., Lieut. Col., M. C.
Greenwood, Allen, Lieut. Col., M. C.
Kerr, H. H., Lieut. Col., M. C.
Mosher, Harris P., Lieut. Col., M. C.
Naffzigger, Howard, Lieut. Col., M. C.
Richardson, Charles W., Lieut. Col., M. C.
Bagley, Charles, jr., Maj., M. C.
Brown, G. U. I., Maj., M. C.
Bruner, W. E., Maj., M. C.
Coleman, Claude C., Maj., M. C.
Covington, L. C., Maj., M. C.
Ivy, Robert H., Maj., M. C.
Loeb, H. W., Maj., M. C.
Penberthy, G. C., Maj., M. C.
Barnes, Harry A., Capt., M. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

REFERENCES.

(1) Organization and report of the activities of the Section of Surgery of the Head. On file, Record Room, S. G. O., Weekly Report. File. Correspondence. Subject: Committee on Head Surgery. On file, Record Room, S. G. O., 156772 and 199804 (Old Files); 021.4 (Council National Defense).

(2) Correspondence. On file, Record Room, S. G. O., 172158 (Old Files).

(3) Office order, No. 97, S. G. O., November 30, 1918.

(4) (*a*) Manual of Ophthalmology. Prepared by the Subsection of Ophthalmology, Section of Surgery of the Head, Division of Surgery, Office of the Surgeon General, War Department. Government Printing Office, Washington, D. C., 1917.

(*b*) Medical War Manual No. 3, authorized by the Secretary of War and under the supervision of the Surgeon General and the Council of National Defense. Second edition, thoroughly revised. Illustrated. Lea & Febiger, Philadelphia and New York, 1918.

(*c*) War Surgery of the Nervous System. A digest of the important medical journals and books published during the European war. Compiled by the Division of Brain Surgery, Section of Surgery of the Head. Office of the Surgeon General, Washington, D. C., 1917. Government Printing Office, Washington, D. C., 1917.

(*d*) Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures, by Vilray Papin Blair, A. M., M. D., F. A. C. S., professor of oral surgery in the Washington University Dental School, and associate in surgery in the Washington University Medical School. Third edition. Revised so as to incorporate the latest war data concerning gunshot injuries of the face and jaw. Compiled by the Section of Surgery of the Head, Subsection of Plastic and Oral Surgery, Office of the Surgeon General of the Army, Washington, D. C., with 460 illustrations. C. V. Mosby Co., St. Louis, 1917.

(*e*) Medical War Manual No. 8, authorized by the Secretary of War and under the supervision of the Surgeon General and the Council of National Defense. Lea & Febiger, Philadelphia and New York, 1918.

(5) Weekly reports from the Chief of the Division of Head Surgery to the Surgeon General, United States Army. On file, Record Room, S. G. O., Weekly Report File.

(6) Records of General Hospital No. 11, Cape May, N. J. On file, Record Room, S. G. O., 730 (Head Surgery, Cape May, N. J.) (K).

(7) Correspondence. On file, Record Room, S. G. O., 322.3 (Base Hospital 115). Annual Report of the Surgeon General, United States Army, 1918, 364; 1919, Vol. II, 1103.

(8) G. O. No. 35, W. D., April 15, 1918.

(9) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1095.

(10) Letter from the Surgeon General to Maj. George Muller, January 31, 1919. Subject: Peripheral Nerve Commission. On file, Record Room, S. G. O., 024.14 (Surgery of Head).

(11) Report by Lieut. Col. Nelson M. Black, M. C. On file, Record Room, S. G. O., 710 (Trachoma).

(12) Manual of Instructions for Medical Advisory Boards, office of the Provost Marshal General. On file, Record Room, S. G. O., Document file. Prescribed by the President under authority vested in him by the terms of the selective service law (act of Congress approved May 18, 1917). Office of the Provost Marshal General, Form 64. Washington, Government Printing Office, 1918.

(13) Memo. for the Surgeon General of the Army from Maj. Nelson M. Black, in charge of ophthalmology, February 28, 1918. Subject: Concentration Camp for Registrants afflicted with Trachoma. On file, Record Room, S. G. O., 710 (Trachoma).

(14) Memo. (undated). Supplementing that of February 28, 1918. Attached thereto (supra).

(15) Memo. for the Surgeon General, United States Army, from Maj. Nelson M. Black, in charge of ophthalmology, March 14, 1918. Subject: Trachoma. On file, Record Room, S. G. O., 710 (Trachoma).

(16) Memo. from Maj. Nelson M. Black to the Hospital Division, April 15 and 17, 1918. Subject: Olympian Springs. On file, Record Room, S. G. O., 601 (Olympian Springs) (S).

(17) Report by Lieut. Col. Nelson M. Black, M. C. On file, Record Room, S. G. O., 710 (Trachoma).

(18) Memo. from Col. W. H. Parker, M. C., for the Surgeon General, United States Army, for the information of division surgeons. Subject: Trachoma. On file, Record Room, S. G. O., 726.3.

(19) Form 75, June 5, 1918. Standard of physical examination for the use of local boards, district boards, and medical advisory boards under the Selective-Service Regulations 160, section 184. Issued through the office of the Provost Marshal General of Washington, Government Printing Office, 1918.
(20) Report by Lieut. Col. G. E. de Schweinitz, July 12, 1918. On file, Record Room, S. G. O., 726.3 (General).
(21) Correspondence. On file, Record Room, S. G. O., 726.3 (General).
(22) Letter from the Surgeon General, United States Army, to the division surgeons, November 27, 1917. Subject: Furnishing Soldiers with Spectacles. On file, Record Room, S. G. O., 413.75 (Spectacles).
(23) Letter from the Surgeon General, United States Army, to medical and supply officer, June 7, 1918. Subject: Spectacles. On file, Record Room, S. G. O., 413.7 (Spectacles).
(24) Letter from the Surgeon General, July 11, 1918. Subject: Spectacles. On file, Record Room, S. G. O., 413.7 (Spectacles).
(25) Letter from the Surgeon General to medical and supply officers, July 1, 1918. Subject: Spectacles for Officers: On file, Record Room, S. G. O., 413.7 (Spectacles).
(26) Letter from Lieut. Col. Nelson M. Black to secretary, Young Men's Christian Association, July 2, 1918. Subject: Spectacles. On file, Record Room, S. G. O., 413.7 (Glasses).
(27) Cablegrams from headquarters, A. E. F., February 25, and September 12, 1918. Subject: Optical units. On file, Record Room, S. G. O., Cablegram File.
(28) Annual Report of the Surgeon General, United States Army, 1918, 364.
(29) Ibid., 363.
(30) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1103.
(31) Papers. On file, Board of Publications, S. G. O.
(32) Report of activities of the Section of Ophthalmology from July 1, 1918, to April, 1919. On file, Record Room, S. G. O., Weekly Report File.
(33) Report of activities of the Ophthalmic Service, A. E. F., by Lieut. Col. Allen Greenwood. On file, Historical Division, S. G. O.
(34) Correspondence. On file, Record Room, S. G. O., 730 (Ophthalmology, A. E. F) (Y).
(35) Annual Report of the Surgeon General, United States Army, 1918, 364.
(36) Reports. On file, Record Room, S. G. O., 319.124 (Ophthalmology, A. E. F.) (Y).
(37) Correspondence. On file, Record Room, S. G. O., 400.11 (Ear Protectors).
(38) *Survey of Head Surgery*. Prepared by the Division of Surgery of the Head in the Office of the Surgeon General, August, 1918, to January, 1919. Copies on file, Finance and Supply Division, S. G. O.
(39) Correspondence and reports. On file, Record Room, S. G. O., 353 (Otolaryngology); and 353 (Camp Greenleaf) (C).
(40) Weekly reports, activities of Section of Otolaryngology, Division of Head Surgery. On file, Record Room, S. G. O., Weekly Report File.
(41) Correspondence. On file, Record Room, S. G. O., Correspondence File 353. (Neurosurgery, Philadelphia, New York, Chicago, and St. Louis) (F).
(42) Manual of Neuro-Surgery. Authorized by the Secretary of War under the supervision of the Surgeon General. Prepared under the direction of the Neurosurgical Section of the Division of Surgery, in collaboration with the Section of Head Surgery, General Surgery, Orthopedic Surgery and Neuropsychiatry, the Army neurosurgical laboratories, and the instruction laboratories of the Army Medical Museum, Washington, D. C., Government Printing Office, 1919.
(43) S. O., No. 238, W. D., October 10, 1918, par. 364, assigning Contract Surg. G. Carl Huber to duty at University of Michigan, Ann Arbor, Mich.
(44) Correspondence. On file, Record Room, S. G. O., 320.2 (Personnel, Base Hospital) General; 322.3 (Medical Units, Neurosurgical).
(45) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1096.
(46) Clinical records, entitled "Peripheral Nerve Register." On file, Record Room, S. G. O., 700.6–1.
(47) Office order No. 496, S. G. O., August 14, 1919.
(48) Annual Report of the Surgeon General, United States Army, 1819, Vol. II, 1100.
(49) Reports of schools. Subject: Instruction in Maxillofacial Surgery. On file, Hospital Division, S. G. O.
(50) Correspondence. Subject: Oral Units. On file, Record Room, S. G. O., 322.3 (Plastic and Oral Surgery Units) (V).
(51) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1100.

CHAPTER XIX.

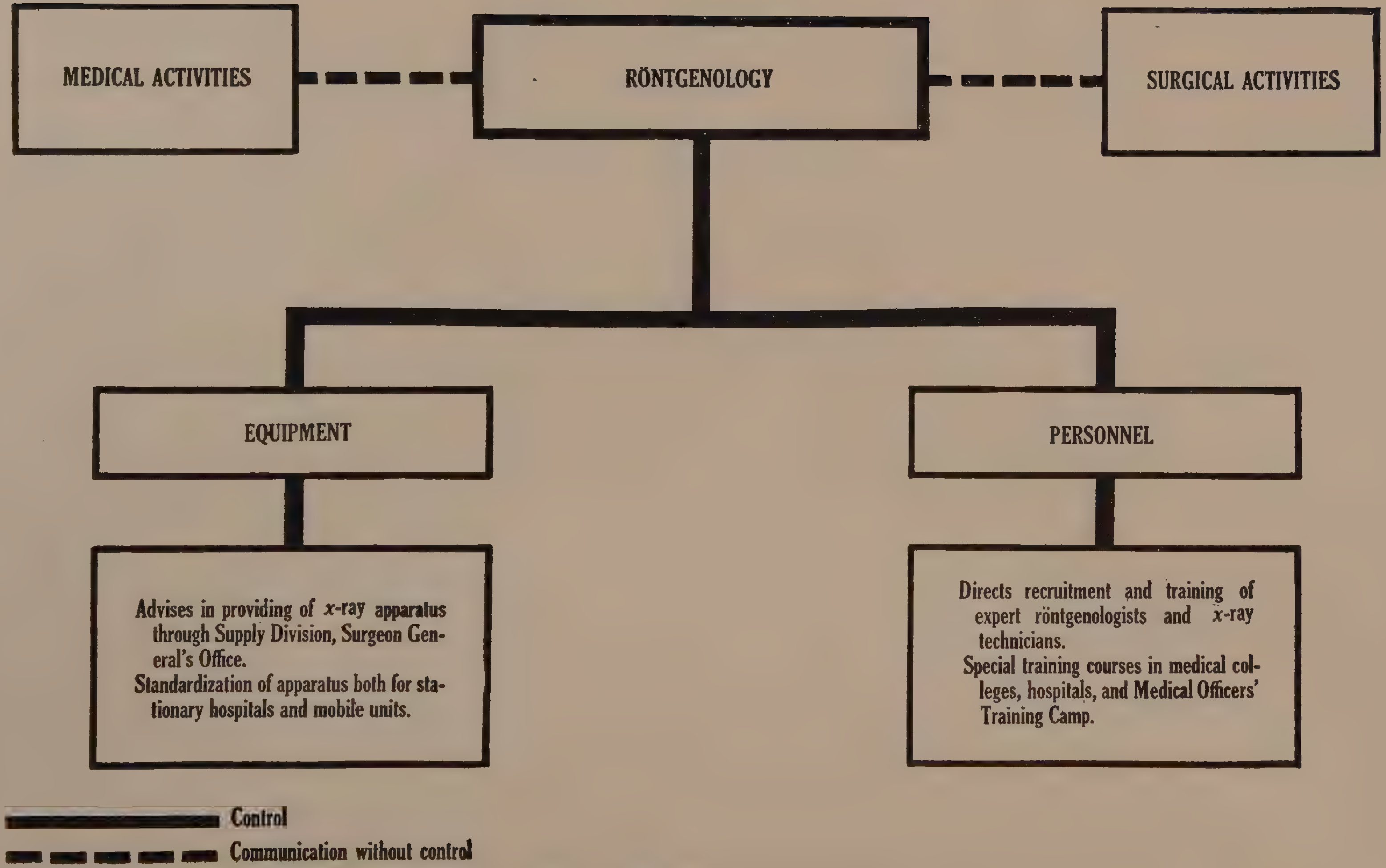
DIVISION OF ROENTGENOLOGY.

Prior to the war only the larger of our military hospitals were equipped with X-ray apparatus. As these larger hospitals were comparatively few in number, there was no organized effort to maintain a selected group of officers whose sole or principal specialty was roentgenology. In the curriculum of the Army Medical School theoretical and practical instruction in roentgenology was included for the training of the student body,[1] but it was intended primarily as a broadening educational feature rather than with the view to the creation of specialists. As a matter of fact, the occurrence was rare when the X-ray work of even the largest of our hospitals demanded the full-time attention of an officer and it was the usual practice for roentgenology to be assigned to an officer as an additional duty. Specialization in roentgenology was thus a fortuitous circumstance and was dependent almost entirely on an officer's initiative. X-ray equipment and supplies were handled as part of the general question of finance and supply of the Medical Department.

CENTRAL ORGANIZATION.

In May, 1917, the officer in charge of the supply division of the Surgeon General's Office recommended that an officer familiar with roentgenological requirements be assigned to the Surgeon General's Office for general supervision of the whole X-ray problem, including the purchase, distribution, and installation of X-ray apparatus.[2] Based on this recommendation, a roentgenologist was ordered to report for duty in the Surgeon General's Office [3] and was verbally assigned to the Supply Division, wherein was organized an X-ray section, of which he was given charge. Included among this officer's duties was that of a disbursing officer of the Medical Department for disbursing funds connected with the purchase of X-ray apparatus and supplies.[4] While there was, of necessity, close liaison of the X-ray Section of the Supply Division (the latter the newly organized Division of Finance and Supply, q. v.), and the different professional divisions of the Surgeon General's Office, roentgenology, as an office entity, continued to function under the Finance and Supply Division until July 10, 1918, when the Division of Roentgenology was established.[5] (See Chart XX.) On December 1, 1918, the division ceased to exist as such, becoming the Section of Roentgenology of the Division of Surgery.[6] (See Chart XXIV.)

In the following report of the roentgenological activities of the Surgeon General's Office no attempt is made to maintain a distinct line of cleavage between the activities as carried on within the Supply Division or Division of Finance and Supply, the Division of Roentgenology, and the Section of Roentgenology of the Division of Surgery. For the two chief problems involved in the administration of the roentgenological service, namely, the supply of suit-


MEDICAL ACTIVITIES
RÖNTGENOLOGY
SURGICAL ACTIVITIES
EQUIPMENT
PERSONNEL
Control
Communication without control

Advises in providing of *x*-ray apparatus through Supply Division, Surgeon General's Office.

Standardization of apparatus both for stationary hospitals and mobile units.

Directs recruitment and training of expert röntgenologists and *x*-ray technicians.

Special training courses in medical colleges, hospitals, and Medical Officers' Training Camp.

Chart XX.—Division of Roentgenology, Surgeon General's Office, June, 1918.

able apparatus and other equipment in sufficient quantities and the acquisition of a sufficient number of roentgenologists, the administrative routine varied little, whether executed by a section of another division or by the Division of Roentgenology itself, since apparatus and equipment had to be provided for through the Division of Finance and Supply and the personnel through the Personnel Division.

X-RAY SUPPLIES.

On April 15, 1917, before a roentgenologist had been assigned to the Surgeon General's Office, as noted, a committee was appointed by the Council of National Defense for the purpose of standardizing X-ray apparatus and supplies.[7] This committee promptly prepared specifications covering all types of X-ray supplies and apparatus, and drew plans covering the construction of X-ray laboratories in the military camps to be established. The committee also compiled a list of staple medical and surgical supplies which was finally issued by the Council of National Defense and later adopted by the War Industries Board.[8] The list of X-ray supplies thus compiled, with a few alterations and additions, served as the official supply list for the Army throughout the war.

Procurement.—Invitations were given to a number of manufacturers of X-ray apparatus to submit samples of transformers for investigation and test. Five manufacturers responded and machines manufactured by various firms were subjected to investigation and tests. These investigations and tests were effected at the X-ray School, New York City, so long as that school operated, and upon its discontinuance, at the Army Medical School, Washington, D. C. Purchases of X-ray apparatus were confined to the types found satisfactory in these tests.[9] An inspection of the factories of the different manufacturers of X-ray apparatus was undertaken from the Surgeon General's Office in order that information might be made available concerning the capacity of each of the plants. Contracts for apparatus were therefore divided into parts subject to the ability of the manufacturers concerned to make prompt deliveries.[9] An electric company was persuaded to enlarge its facilities for the manufacture of a special type of radiator Coolidge tube. This having been done, there was never at any time a shortage of these tubes, but, on the contrary, large numbers were released at various times to the different allied Governments.

In securing and assembling X-ray supplies, both for X-ray laboratories and military hospitals of the United States and abroad, difficulties were encountered on account of the national shortage in certain essential models. In part of this work the United States Bureau of Standards assisted the Division of Roentgenology, investigating various matters, notably the protective value of the various lead glass bowls, tube shields, and tube boxes.[10]

Improved apparatus.—An X-ray table was designed at the plant of the Kelly-Koett Manufacturing Co., Covington, Ky., and, having proved satisfactory, was adopted as a standard for Army use.[11]

A portable X-ray apparatus had been devised by the General Electric Co., and having been investigated by the Division of Roentgenology of the Surgeon General's Office and found superior to anything devised up to that time, was adopted for field use.[12] This device consists of a special Delco gas electric set, ¾-kilowatt capacity, small transformer and Coolidge filament transformer, and a special air-cooled type of radiator Coolidge tube, capable of rectifying a high voltage, alternating current. There was thus provided an independent X-ray equipment capable of generating its own current by means of a small portable engine, and comprising a tube capable of self-rectification, thereby doing away, at a stroke, with all synchronous motors, mechanical rectifying devices, rotating switches, mercury interrupters, and other devices.

A bedside X-ray unit was designed to permit X-ray examination in wards to be made with a minimum of disturbance of the patient. This unit consisted of a combined cabinet and tube stand, a radiator type Coolidge tube, special lead glass shield, and a transformer and control apparatus.[13]

Much other X-ray apparatus suitable for war work was promptly designed, and thus the question of suitable and standard types was satisfactorily disposed of at an early date.

United States Army X-ray ambulances.—To provide X-ray equipment for mobile hospitals and mobile surgical units, X-ray apparatus was installed in a standard Army ambulance after it had been modified by removing the seats and making a few simple additions to enable it to carry a field portable outfit and one bedside unit. In May, 1918, the first completed X-ray ambulance was sent from Washington on a road test to Canada. This test proved a success and subsequently other X-ray ambulances were modeled on it.[14]

At about the time of the armistice there had been shipped overseas 150 complete base hospital X-ray equipments, 250 bedside equipments, 264 portable X-ray equipments, and 55 X-ray ambulances, in addition to many other separate articles of X-ray equipment.[15]

PERSONNEL.

Procurement and training.—In June, 1917, the Committee on Preparedness of the American Roentgen Ray Society, recognizing that many roentgenologists would be required in the Army, called a meeting in New York of a number of leading specialists in roentgenology. At this meeting it was decided to recommend the establishment of a number of schools of roentgenology. It was further proposed at the meeting, which was attended by the officer in charge of X-ray supplies in the Surgeon General's Office, that these schools be placed under the direct control of the War Department and that the trained roentgenologists in charge of them be commissioned in the Officers' Reserve Corps. These suggestions were favorably acted upon[16] and schools were promptly opened in New York City, Boston, Philadelphia, Baltimore, Richmond, Pittsburgh, Chicago, Kansas City, and Los Angeles. Medical offiers in groups of 10 were assigned to the various schools, and upon the completion of the courses of instruction of those destined for overseas they were ordered to New York for final examination and further instructions before any were ordered overseas.

One of these schools soon performed an important service in addition to the instruction of personnel. At the New York School of Roentgenology the investigation and tests to which sample apparatus were subjected were carried out while they were employed in the instruction of the students. It has been noted previously that no contracts were let until after samples of X-ray apparatus had been found satisfactory in practical tests.

At the end of six months after their establishment, the schools, with the exception of the one in New York City, having fulfilled their function, were directed to close.[17] The training of roentgenologists still proceeded rapidly at the New York school, which in the meantime had been enlarged and provided with an augmented teaching personnel. Various technicians experienced in the installation and repair of X-ray apparatus were commissioned in the Sanitary Corps and given a short course of instruction at the New York school.[18]

Preliminary schools were early established at the medical officers' training camps at Camp Greenleaf, Ga., and Fort Riley, Kans., where men were selected from the officers at the two camps and given preliminary steps in roentgen training.[19]

In May, 1918, arrangements had been completed for concentrating all instruction in X-ray work at the Medical Officers' Training Camp, Camp Greenleaf, Ga.[20] A preliminary draft of the proposed curriculum was made in the Surgeon General's Office, and at the same time selected officers as instructors were asked for. Complete specifications for all apparatus required at this school, as well as requisite changes in building plans, were also prepared. It was planned that the school turn out a minmum of 25 trained roentgenologists a month. A school for the instruction of enlisted men in large numbers, at least two for each roentgenologist, was also instituted at Camp Greenleaf.

The Personnel Division of the Surgeon General's Office found it necessary, at about this time, to cooperate with the Division of Roentgenology to secure suitable candidates for training as roentgenologists. As the School of Roentgenology at Camp Greenleaf was now in position to take large classes, the New York school was dismantled of apparatus.[21] To overcome the shortage in roentgenologists which become apparent in August, 1918, a conference was held in the Surgeon General's Office, with the other divisions concerned, on the ways and means of the doubling of the capacity and output of the Camp Greenleaf school, and increasing that of the Army Medical School, Washington, D. C. The plan adopted was expected to produce 120 roentgenologists a month from the Camp Greenleaf school and 150 manipulators from the Army Medical School. Arrangements were also made for the reopening of the New York school.[22] A medical officer, who was also a specialist in roentgenology, was assigned to the New York school for duty in connection with the instruction of experienced roentgenologists who received from him short courses in localization and the manipulation of Army types of apparatus. This made them available as chiefs of service in this country to fill vacancies caused by the depletion of X-ray personnel to supply experienced roentgenologists to the American Expeditionary Forces.

Overseas personnel.—Personnel was sent abroad, attached to base and evacuation hospital units, and as casuals. Subsequent to September 6, 1918, X-ray personnel furnished base and evacuation hospital units under orders for overseas duty consisted of one roentgenologist and two trained enlisted manipulators.[23]

The United States Army X-ray Manual appeared in its first edition in 1918.[24] This manual was the production of the joint efforts of a large number of roentgenologists and it was devoted chiefly to electrophysics, localization methods, and to description of the special apparatus employed in the United States Army. A second edition, a very much more pretentious volume, containing all the matter of the first and in addition a very comprehensive section devoted to roentgen diagnosis, was published in the spring of 1919.[24]

X-RAY LABORATORIES.

When the committee of the Council of National Defense drew up plans for the construction of X-ray laboratories of the military camps, already noted, the military authorities contemplated the construction of base hospitals, with a maximum capacity of 500 beds. The plans were approved in the Surgeon General's Office and employed in the construction of X-ray laboratories at the various divisional camps.[25] In spite of the fact that the size of the division camp base hospital was increased until their capacity in many cases was 2,000 or more beds, this simple plan of construction, which provided very limited space, was not changed for a year, during which time these X-ray laboratories in their restricted space successfully met the many increased demands of the hospital of which they formed a part.

The equipment of the laboratories of the various hospitals proceeded rapidly. It was the aim of the division of roentgenology in every case to have complete roentgen equipment installed and in operation in charge of a competent roentgenologist on or before any of these hospitals opened. This was accomplished in every instance.

In August, 1918, it was found necessary to make more elaborate and larger plans for X-ray laboratories in the hospitals,[26] which in the meantime had been expanded. This was done by this division, which turned the modified plans over to the Hospital Division. The new design figured on a laboratory, operating 10 hours a day, to take care of not to exceed 2,000 patients.[26]

ACTIVITIES SUBSEQUENT TO ARMISTICE.

The armistice was signed just as the efforts of the Division of Roentgenology had reached the peak of production of roentgenologists, apparatus, and supplies. Immediate steps were taken to cancel orders for material where possible, and to stop production in every instance without waiting for any authorization.[27] This action resulted in the saving of many thousands of dollars, and obviated embarrassing a number of manufacturers. As it was assumed that, regardless of the cessation of hostilities, a large Army of occupation would be required, estimates for apparatus and supplies, sufficient for an Army of 80 divisions for a period of six months, were prepared and submitted to the Division of Finance and Supply.[27] The cancellation of contracts for apparatus and supplies was based on the possibility of the maintenance of such a force in the field. Considerable quantities of apparatus of the Army standard type were released to the Bureau of Purchases of the American Red Cross.[27]

The Camp Greenleaf School was continued at full capacity, it being considered that even though officers under instruction there might not be required overseas, yet they could be well employed in the home military hospitals, which had been dangerously depleted of roentgenologists in order to supply the great demand for roentgenologists overseas. Finally, it was decided to keep this school open until February, 1919; actually it ceased to function at the end of the year 1918, when much of its equipment was sent to the Army Medical School.[28]

In December, 1918, following the transfer of the major portion of the activities of the Division of Finance and Supply of the Surgeon General's Office to the Director of Purchase, Storage and Traffic of the General Staff, the Section of Roentgenology (as previously explained, the change of its status from division to section was effected at this time) continued to maintain close liaison with the Medical Supply Division, so that the obtaining of its supplies and equipment was on much the same basis as before.

In this same month a circular letter was addressed to the commanding officers of all military hospitals, directing that a selection be made of all X-ray plates showing interesting pathological conditions preparatory to sending these to the Army Medical Museum for incorporation in a library of X-ray pathology. At the end of the year an inspection of the X-ray laboratories throughout the country showed a generally satisfactory condition of affairs, except for the inadequate space in many instances. Loss of experienced roentgenologists by discharge now became excessive, and it proved necessary to send telegraphic notification to all commanding officers to discharge no more roentgenologists without the authority of the Surgeon General's Office.[28]

The School of Roentgenology, New York, was officially closed January 21, 1919.[29] This school trained 244 officers in its regular course, while 58 officers received supplementary courses and 11 roentgenologists of wide experience were given some instruction.[29]

Throughout the earlier months of 1919 the policy of substituting regular medical officers for emergency officers, so that the latter might be discharged, was systematically carried out; at the same time special instruction was given the former that they might do so.[30]

The records of the division show the following:[31] From February to June, 1919, there were admitted to the hospitals in the United States 258,988 patients, 140,205 of whom were examined by X-ray films. Twenty-four thousand five hundred and one fluoroscopies were performed. Each roentgenologist examined per month an average of 227 patients. An average number of 142 roentgenologists were on duty; each roentgenologist served an average of 364 patients and in hospitals of 364 beds 227 of the patients were examined each month; 54.1 per cent of all patients admitted to army hospitals were given an examination by X-ray; 15 per cent of all patients were examined by X-ray with the fluoroscope.

An important work of the section at the end was preparing for the General Staff statements showing the exact amount of apparatus, equipment, and supplies necessary for the initial equipment and maintenance in the field of an army of one-half million men [32] and in the section files are data covering every possible aspect of military roentgenology up to the time of its incorporation in the Division of Surgery (Dec. 6, 1918).

The efforts of the officer in charge were finally directed toward obtaining as Medical Reserve Corps officers a sufficient number of experienced military roentgenologists to insure that in the event of necessity there would be available enough to take entire charge of the X-ray work in all military hospitals.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Christie, Arthur C., Col., M. C., chief.
Johnston, George C., Col., M. C., Chief.

Merritt, E. A., Lieut. Col., M. C.
Shearer, John S., Lieut. Col., M. C.
Brown, Percy, Maj., M. C.
Busby, A. H., Maj., M. C.
Cochran, H. B., Capt., S. C.
Herendeen, Ralph E., Capt., M. C
Middleditch, L. S. C., Capt., S. C.
Mooradian, A. P., Capt., S. C.
Moyer, H. D., Capt., S. C.
Palmer, Myron B., Capt., M. C.
Weir, A. H., Capt., S. C.
Rogers, L. L., First Lieut., M. C.
Wentzel, Charles E., First Lieut., S. C.

REFERENCES.

(1) Manual for the Medical Department, 1916, par. 143.
(2) Memo. for Maj. R. A. Noble, M. C., from Lieut. Col. H. C. Fisher, M. C. (Chief of Supply Division), May 14, 1917. On file, Record Room, S. G. O., 201 (Christie, Arthur C.).
(3) S. O., No. 114, par. 49, W. D., May 17, 1917.
(4) Memo. for Maj. Edwin P. Wolfe, June 27, 1917, Scheme of Organization of Supply Division. On file, Record Room, S. G. O., 024. Supply Division, copy of requisition for disbursing funds, No. 114363, July 5, 1917. On file, Record Room, S. G. O., Requisition Books.
(5) Office Order, No. 66, S. G. O., July 10, 1918. On file, Record Room, S. G. O., 024.14 (Division of Roentgenology).
(6) Office order No. 97, S. G. O., November 30, 1918. On file, Record Room, S. G. O., 024.1 (Administrative Division).
(7) Correspondence. Subject: Council of National Defense. On file, Record Room, S. G. O., Correspondence File, 156772 (Old Files).
(8) List of Staple Medical and Surgical Supplies Selected to Meet War Conditions; Part IV, X-Ray Apparatus and Supplies. Compiled by the Council of National Defense, Washington, D. C. Washington, D. C., Government Printing Office, 1918.
(9) Weekly reports, Division of Roentgenology. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).
(10) Weekly report from chief of Division of Roentgenology to the Surgeon General of the Army, April 18, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).
(11) Letter from Maj. Arthur C. Christie to the Kelly-Koett Co., June 20, 1917. Subject: X-Ray Table Designed by Doctor Johnston and Professor Shearer. On file, Finance and Supply Division, S. G. O., 396 (Kelly-Koett Manufacturing Co.).
(12) Letter from the General Electric Co. to the Surgeon General, dated June 13, 1917. Subject: Specifications for Electrical Equipment for Portable X-Ray Outfit. On file, Finance and Supply Division, S. G. O., 263 (General Electric Co.).
(13) Letter from Maj. A. C. Christie to the Kelly-Koett Co., July 20, 1917. Subject: Bedside Unit. On file, Finance and Supply Division, S. G. O. (Kelly-Koett Co.).

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

(14) Weekly reports from chief of Division of Roentgenology to the Surgeon General, United States Army, May 10 and June 21, 1918, respectively. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(15) Weekly reports from chief of Division of Roentgenology to the Surgeon General, July 12 and 26, November 1, 8, and 15, respectively. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(16) Letter from Maj. A. C. Christie, M. R. C., to the Surgeon General, May 24, 1917. Subject: Organization of School of Roentgenology. On file, Record Room, S. G. O., 156755–17 (Old Files).

(17) Letter from Maj. A. C. Christie, M. R. C., to Maj. Alfred L. Gray, M. C., Medical College of Virginia, Richmond, Va., November 28, 1917. Subject: Closing of Schools of Roentgenology. On file, Finance and Supply Division, S. G. O. $\frac{231}{18}$ (Gray, Alfred L.).

(18) Letter from the Surgeon General to Mr. Samuel G. Zuckerman, Department of Agriculture, July 28, 1917. Subject: Commission in Sanitary Corps for X-Ray Mechanics and Technicians. On file, Record Room, S. G. O., 193841 (Old Files).

(19) Letter from Surgeon General to commandant, Medical Officers' Training Camp, Fort Oglethorpe, Ga., December 6, 1917. Subject: School in Military Roentgenology. On file, Record Room, S. G. O., Roentgenology School (Camp Greenleaf) (C).

(20) Weekly reports from chief of Division of Roentgenology to the Surgeon General of the Army, May 10, 1918, and June 7, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(21) Weekly report from the chief of Division of Roentgenology to the Surgeon General, United States Army, June 7, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(22) Weekly report of Chief of Division of Roentgenology to the Surgeon General, United States Army, September 20, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(23) Weekly report from Chief of the Division of Roentgenology to the Surgeon General, United States Army, September 6, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(24) United States Army X-Ray Manual, authorized by the Surgeon General, United States Army. Paul B. Hoeber, New York; first edition, 1918; second edition, 1919.

(25) Plan F. (Incorporated in plans for base hospitals constructed, 1917, 1918.) On file, Hospital Division, S. G. O.

(26) Weekly report from the Chief of the Division of Roentgenology to the Surgeon General, August 9, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(27) Weekly report from Chief of Division of Roentgenology to the Surgeon General, November 15, 1918. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(28) Weekly report from Chief of the Section of Roentgenology, Division of Surgery, December 30, 1918, and January 17, 1919, respectively. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(29) Weekly report from Section of Roentgenology, Division of Surgery, to the Surgeon General, February 21, 1919. Weekly Report File (Roentgenology). On file, Record Room, S. G. O.

(30) Weekly reports from Chief of Section of Roentgenology, Division of Surgery, to the Surgeon General, United States Army, April 24, 1919, and May 8, 1919. On file, Record Room, S. G. O., Weekly Report File (Roentgenology).

(31) Compiled from monthly X-ray reports. On file, Record Room, S. G. O., Correspondence File, 730 (Roentgenology).

(32) Letter from Dr. George E. Johnston, M. C., to Col. Charles Lynch, M. C., March 24, 1921. Subject: Apparatus, Equipment and Supplies. On file, Record Room, S. G. O., 444.3–1 (General)

CHAPTER XX.

DIVISION OF PHYSICAL RECONSTRUCTION.

ORGANIZATION.

The Division of Special Hospitals and Physical Reconstruction was organized on August 22, 1917, with the assignment to duty of a commissioned medical officer as chief,[1] and with the division of the work into the following special sections: (1) Education (general, technical, agricultural, and psychological); (2) physiotherapy; special hospitals (cooperating with the Hospital Division in the selection of hospital sites, buildings and grounds for the same, designing typical buildings for schools and shops, physiotherapy, gymnastics and other reconstruction purposes); (3) clinical (cooperating with all clinical divisions, particularly with those of general surgery, orthopedic surgery, surgery of the head, and neuropsychiatry, each of which assigned an officer to duty in the division); (4) publicity (or information for) with the analysis and compilation of all available literature on reconstruction and rehabilitation of disabled soldiers, sailors, and marines. Specifications were made of minimum and maximum equipment for schools, workshops, gymnasia and physiotherapy, including electrotherapy, and for horticulture, agriculture, dairying, and the like.

In the earlier days, many sites and buildings were inspected and approved or rejected as available for special hospitals for physical reconstruction. Experts were detailed to make a study of the industrial plants and technical schools of the country with a view to possible cooperative utilization in the program of physical reconstruction. The War Department, in December, 1917, approved the employment of women and men as reconstruction aides.[2] These were designated "employees at large" of the Medical Department. Through this division, cooperating with the Division of Orthopedic Surgery, schools of arts and crafts were encouraged to give intensive training to women teachers, graduates of colleges and universities, to qualify them as reconstruction aides in occupational therapy; physical culture schools and university hospitals were encouraged to give intensive training to women to qualify them as reconstruction aides in physiotherapy.

Meanwhile, the functions of the Division of Physical Reconstruction were not well defined. The program was at first too elaborate, embracing, as it did, plans for the vocational training of the disabled man and his placement in a suitable occupation after his discharge from the Army. This extensive program did not receive the approval of the War Department or of Congress. At the request of the Secretary of War, the Surgeon General called a conference with the governmental and civilian organizations interested in reconstruction and rehabilitation problems with the idea of defining the extent of authority to be exercised by the Army and other organizations in this work and the best ways and means for the administration of its separate phases.[3] This conference met in the Office of the Surgeon General on Monday, January 4, 1918, with representatives from the Medical Departments of the Army and Navy, the United States Public Health Service, the Medical Section of the Council of National Defense, the Treasury Department, the Department of Labor, the Department of the Interior, the Federal Board for Vocational Education, the American Red Cross, the United States Chamber of Commerce, the National Manufacturers' Association, the American Federation of Labor, and the civilian medical profession. As a result of the conference, a committee of 15 was appointed to prepare a report of recommendations, which was submitted to the Secretary of War with a tentative draft of a proposed bill.[3] This report outlined, defined, and separated the functions of the Medical Departments of the Army and Navy and those of civilian agencies in carrying on the work of physical reconstruction and rehabilitation. It was recommended that all reconstruction and reeducational activities relating to members of the military and naval forces of the United States be directly under the control of the Surgeon Generals of the two services until the disabled soldier or sailor, as the case might be, was ready for discharge, if unfit for further military service, when he would pass under the control of such agencies for his rehabilitation as the Government might provide. It was recommended that a board having executive control over continued educational training, placement in employment, and economic and social supervision be created to take charge of this work at the point where it was relinquished by the Army or Navy. A tentative draft of a bill covering these points was sent to the Secretary of War, but was never introduced into Congress.

Early in the year 1918 a medical officer was assigned to duty in this division as director of the section on the reconstruction of the blind and nearly blind;[4] another, as director of the section on the reconstruction of the soldiers, sailors, and marines disabled by deafness and speech defects.[5] In April, 1918, the Educational Section was organized.

POLICIES AND PROGRAM.

In the meantime the policies and program adopted by the division were not being satisfactorily put into practice. The War Department was urgently requested, therefore, to sanction the proposed work. On May 6, 1918, the Secretary of War defined the reconstructive functions of the Medical Department in the following language:[3]

> You are authorized to proceed with the scheme for reconstruction of officers and enlisted men of the Army alone without consideration of the other bureaus of the Government involved. This reconstruction to be clearly understood to end at the point where the medical reconstruction ceases; that is, the reconstruction to take place in such cases of officers and enlisted men as come under proper medical treatment by the War Department, leaving for other reconstruction purposes the subsequent treatment after discharge from the care of the Medical Department.

This understanding of the field of work in reconstruction assigned to the Medical Department of the Army did not entirely clarify the situation, as memoranda prepared for the War Department requesting approval of needed hospital construction, equipment for physiotherapy, for occupational therapy, and for a qualified personnel to administer physiotherapy and curative work in military hospitals were disapproved wholly or in part, or were returned by the General Staff for additional information.[6]

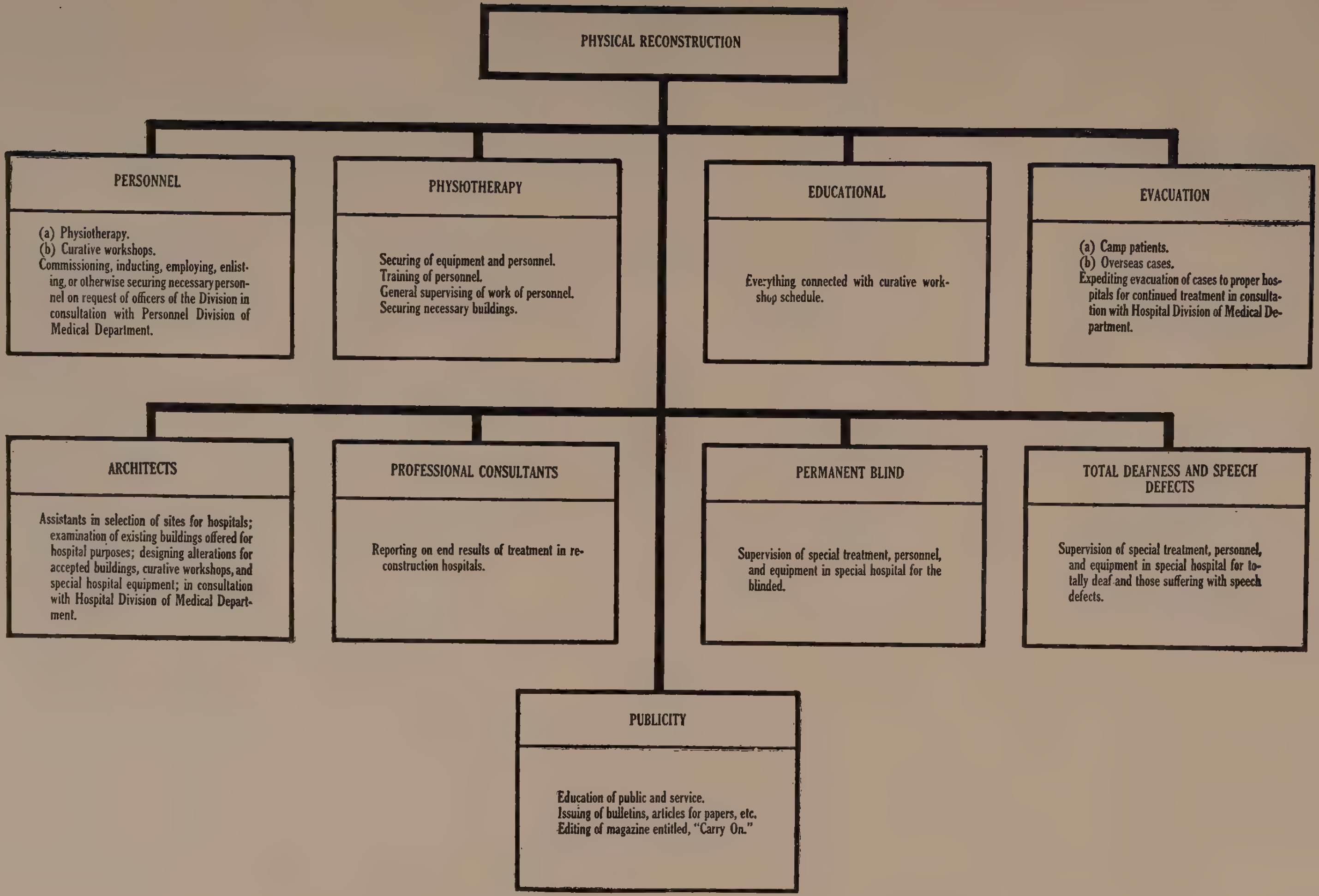
In spite of the delay incident to this confusion, very creditable application of all the measures included under physical reconstruction was begun early in 1918 at United States General Hospital No. 2, Fort McHenry; at Walter Reed General Hospital, Takoma Park, Washington, D. C.; and at United States General Hospital No. 6, Fort McPherson, Atlanta, Ga.

The Secretary of the Navy requested the War Department to admit disabled sailors and marines to military hospitals for physical reconstruction, and arrangements were made with the Bureau of Medicine and Surgery, Navy Department, on May 10, 1918, whereby the Surgeon General of the Army was given charge of sailors and marines, as requested.[7] This authority was confirmed by the Secretary of War on May 27.

In May, 1918, the functions of this division in relation to the clinical divisions were more clearly defined. The Section of Orthopedic Aides, was transferred from the Orthopedic Division to the Reconstruction Division,[8] and the name was changed to the Division of Physical Reconstruction,[9] (See Chart XXI.) All officers on duty in this division as representatives of clinical divisions returned to their proper divisions. The interest which it was necessary for this division to maintain in hospital sites, special buildings for schools, shops, physiotherapeutics, and gymnastics was better secured by the organization therein of a section on architecture and by cordial cooperative relations with the Hospital Division. In the Surgeon General's Office it was understood that the Division of Physical Reconstruction would furnish to the hospitals which were to function in physical reconstruction the required personnel of officers, noncommissioned and enlisted men, and reconstruction aides, for efficiently carrying on occupational therapy, physiotherapy, gymnastics, sports and pastimes, and social service. In the hospitals it was agreed that the clinical officers would prescribe types of occupational and physiotherapy play and drill required to aid in the physical and functional restoration of the disabled men, leaving to the educational and physiotherapeutic officers the efficient application of the reconstructive measures prescribed. The division was reorganized to accord with the plan, and was so continued until June 20, 1919, when it ceased to exist as a separate division, becoming the Section on Physical Reconstruction of the Hospital Division.[10] As reorganized in July, 1918, it embraced sections on education (including general, technical, agricultural, psychological, social service, publicity, and sports and pastimes); physiotherapy; rehabilitation of the blind; rehabilitation of those disabled by deafness and defects of speech; architecture; and, after the armistice, convalescent centers. The responsibility for efficiency in each section was placed upon a section director and on subdirectors of subsections.

On June 27, 1918, the President signed the Smith-Sears bill, known as the vocational rehabilitation act.[11] This act provided for the vocational education of compensable disabled soldiers, sailors, and marines after their discharge from the Army and Navy under the jurisdiction of the Federal Board for Vocational Education. The jurisdiction of the War and Navy Departments over disabled men of the military and naval forces was expressed in section 6 of this vocational rehabilitation act:

> That all medical and surgical work or other treatment necessary to give functional and mental restoration to disabled persons prior to their discharge from the military or naval forces of the



PERSONNEL

(a) Physiotherapy.
(b) Curative workshops.
Commissioning, inducting, employing, enlisting, or otherwise securing necessary personnel on request of officers of the Division in consultation with Personnel Division of Medical Department.

PHYSIOTHERAPY

Securing of equipment and personnel.
Training of personnel.
General supervising of work of personnel.
Securing necessary buildings.

EDUCATIONAL

Everything connected with curative workshop schedule.

EVACUATION

(a) Camp patients.
(b) Overseas cases.
Expediting evacuation of cases to proper hospitals for continued treatment in consultation with Hospital Division of Medical Department.

ARCHITECTS

Assistants in selection of sites for hospitals; examination of existing buildings offered for hospital purposes; designing alterations for accepted buildings, curative workshops, and special hospital equipment; in consultation with Hospital Division of Medical Department.

PROFESSIONAL CONSULTANTS

Reporting on end results of treatment in reconstruction hospitals.

PERMANENT BLIND

Supervision of special treatment, personnel, and equipment in special hospital for the blinded.

TOTAL DEAFNESS AND SPEECH DEFECTS

Supervision of special treatment, personnel, and equipment in special hospital for totally deaf and those suffering with speech defects.

PUBLICITY

Education of public and service.
Issuing of bulletins, articles for papers, etc.
Editing of magazine entitled, "Carry On."

CHART XXI.—Division of Physical Reconstruction, Surgeon General's Office, June, 1918.

United States shall be under the control of the War Department and the Navy Department, respectively. Whenever training is employed as a therapeutic measure by the War Department or the Navy Department, a plan may be established between these agencies and the board, acting in an advisory capacity, to insure, in so far as medical requirements permit, a proper process of training and the proper preparation of instructors for such training. A plan may also be established between the War and Navy Departments and the board, whereby these departments shall act in an advisory capacity with the board in the care of the health of the soldier and sailor after his discharge.

The board shall, in establishing its plans and rules and regulations for vocational training, cooperate with the War Department and the Navy Department in so far as may be necessary to effect a continuous process of vocational training.

On July 11, 1918, the War Department promulgated the full text of the vocational rehabilitation act, and also the early expressed policy of the Division of Physical Reconstruction:[11]

(*a*) Physical reconstruction is defined as complete medical and surgical treatment, carried to the point where maximum functional restoration, mental and physical, has been secured. In securing this result the use of work, mental and manual, will often be required during the convalescent period.

(*b*) Hereafter no member of the military service disabled in line of duty, even though not expected to return to duty, will be discharged from service until he has attained complete recovery, or as complete recovery as is expected that he will attain when the nature of his disability is considered. When the degree of recovery described in this paragraph has been attained, members of the military service who remain unfit for further duty should be discharged in the manner provided in the Army Regulations.

The War Department on July 31, 1918, approved the final plan of the Surgeon General for physical reconstruction in the following language:[12]

The general policy of physical reconstruction as proposed by the Surgeon General's Office for the purpose, primarily, of effecting the maximum restoration of disabled soldiers using manual and mental work as a curative agent, and incidentally of training and educating them for further useful work in the Military Establishment, is approved with the understanding that such incidental training will not involve the Government in large expenditures and elaborate installations of shops and apparatus, and provided that all existing facilities, both military and civilian, for training and educating the soldier toward the end in view shall be used to the fullest possible extent.

Accordingly, in August, 1918, the Surgeon General announced the completion of plans for physical reconstruction of disabled soldiers, sailors, and marines in the general military hospitals in agreement with the approved policies.[13] These plans were formulated with a view to close cooperation with the War Department Committee on Education and Special Service in the work of restoring men to full or limited military service, and with the Federal Board for Vocational Education, which was authorized by vocational rehabilitation act to provide vocational training for compensable disabled men after their discharge from the Army and the Navy. They embraced the equipment of general and base hospitals which functioned in physical reconstruction with curative workshops and educational buildings equipped to carry on curative work, physiotherapy buildings, including gymnasia, designed and equipped to utilize every physical means of cure.

RECONSTRUCTION HOSPITALS.

The plan approved on July 31, 1918, embraced authority to commission in the Sanitary Corps of the Medical Department the necessary personnel of educational officers to administer the work in the Office of the Surgeon General and in each of the designated hospitals.[14] In the department of physiotherapy, the personnel of administrative officers was obtained from the Medical Reserve Corps. In both the educational and the physiotherapeutic departments an enlisted personnel was assigned.

On July 31, 1918, the Surgeon General designated the following general hospitals to function in physical reconstruction:[15] Walter Reed, Takoma Park, D. C.; Letterman, San Francisco, Calif.; Fort Bayard, N. Mex.; No. 2, Fort McHenry, Md.; No. 3, Colonia (Rahway), N. J.; No. 6, Fort McPherson, Ga.; No. 7, Roland Park, Md.; No. 8, Otisville, N. Y.; No. 9, Lakewood, N. J.; No. 10, Boston, Mass.; No. 11, Cape May, N. J.; No. 12, Biltmore, N. C.; No. 16, New Haven, Conn.; No. 19, Oteen, N. C.; No. 20, Whipple Barracks, Ariz.; No. 21, Denver, Colo.; No. 24, Parkview, Pa.; No. 26, Fort Des Moines, Iowa; No. 28, Fort Sheridan, Ill.; No. 29, Fort Snelling, Minn.; No. 30, Plattsburg Barracks, N. Y.; No. 31, Carlisle, Pa.; No. 36, Detroit, Mich.; No. 38, Eastview, N. Y.; No. 41, Fox Hills, Staten Island, N. Y., No. 42, Spartanburg, S. C.; No. 43, Hampton, Va.

At this date the organization for reconstruction in each hospital was as follows:

1. An educational personnel consisting of:

(*a*) Chief educational officer, with assistants in technical and agricultural training and psychologists.

(*b*) Instructors in academic, commercial, trade, and agricultural occupations.

(*c*) Civilian women (reconstruction aides) qualified by previous experience as teachers and by intensive training to teach the sick and wounded in the arts and handicrafts and in academic and commercial studies in the wards.

2. A director and qualified personnel of enlisted men to apply to various types of physiotherapy, assisted by—

(*a*) Civilian women employees (reconstruction aides) qualified by education, experience, and intensive training to apply massage, thermo-, electro-, and local hydrotherapy.

3. A director of recreation in sports, games, gymnastics, and military drill with a qualified personnel of assistants, in cooperation with the Commission on Training Camp Activities of the War Department, the American Red Cross, the Y. M. C. A., the K. of C., the Jewish Welfare Board, and the Salvation Army.

4. Construction of buildings or alteration of existing buildings for use as shops for academic and commercial study, for horticulture and floraculture, for the physiotherapy, for gymnasia, and for farm pursuits. Available gardens and fields have been utilized to train the convalescents in the work of gardening, farming, and the like.

5. Equipment for shops, schools, and for physiotherapy, including the gymnasia. Practically all needed books are furnished each hospital by the American Library Association.

In addition to textbooks, there were used as guides for the patients and teachers approximately 50 courses of outline studies in academic, commercial, trade, agricultural, and allied subjects, which were prepared by the educational officers of the Division of Physical Reconstruction, in cooperation with representatives of the Federal Board for Vocational Education and qualified civilian volunteers.

Special facilities were provided for training the blind and nearly blind soldiers, sailors, and marines at United States Army General Hospital No. 7, at Roland Park, Baltimore, Md. The blind were trained to dress, to feed themselves, to get about independently, to read Braille, and to use a typewriter. Coincidently, occupations suitable for the blind were taught by a corps of competent instructors, selected by the division. The disabled service men who suffered from speech defects and from deafness were trained to talk and to understand by lip reading at United States Army General Hospital No. 11, Cape May, N. J., and at General Hospital No. 41, Fox Hills, Staten Island, N. Y. Curative work modified to meet the needs of the tuberculous was applied at seven military tuberculosis sanitaria.

The educational personnel from October, 1918, to June, 1919, with the number of hospitals devoted to physical reconstruction during this period, is given in the following table:[16]

	October.	November.	December.	January.	February.	March.	April.	May.	June.
Number of hospitals	16	17	25	27	41	44	45	40	40
Commissioned officers	37	43	102	125	210	270	264	252	250
Enlisted men	335	314	695	681	809	888	808	750	603
Reconstruction aides	124	157	337	449	806	1,163	1,290	1,383	1,380
Total on staff	496	514	1,134	1,255	1,825	2,321	2,362	2,385	2,233

The number of patients who took manual curative work, with the number of hospitals operating from month to month, are given in the following table:[16]

	October.	November.	December.	January.	February.	March.	April.	May.
Number of hospitals reporting[a]	16	17	25	27	41	44	45	40
Number of patients enrolled in educational work	829	4,387	5,292	8,167	16,296	24,969	28,500	30,096

[a] Reports were not received from two base hospitals which functioned in the work in May.

The personnel in the department of physiotherapy of each hospital, the number of patients treated, and the total number of treatments given from October 1, 1918, to May 31, 1919, is indicated in the following table:[16]

	1918			1919				
	October.	November.	December.	January.	February.	March.	April.	May.
Hospitals with facilities for physiotherapy	9	11	13	27	32	40	49	45
Commissioned officers	12	14	19	32	37	39	44	45
Enlisted men	25	29	36	40	60	75	60	54
Reconstruction aides	125	378	504	530	674	718	748	700

Up to May 31, 1919, 48,988 patients were treated and 1,037,457 treatments were given.[16]

The number of patients registered and dismissed in December, 1918, and January, February, March, and April, 1919, from the hospitals submitting education service reports follows:[16]

	1918	1919			
	December.	January.	February.	March.	April.
Number of patients on first of month	15,352	17,795	33,675	36,018	37,913
New admissions	8,103	10,228	31,347	34,852	28,727
Total	23,455	28,023	65,022	70,870	66,640
Number of patients discharged on C. S. D	1,065	635	1,473	1,897	2,182
Number of patients returned to duty	3,605	2,046	21,278	24,101	17,350
Number of patients transferred	2,157	1,894	2,474	3,224	3,846
Number of patients returned for discharge			4,180	1,897	4,777
Number of patients died, deserted, etc	895	3,160	2,142	2,153	1,800
Total	7,722	7,735	31,547	33,272	29,955
Number of patients at end of month	15,733	20,288	33,475	37,598	36,685

Of the total number of reconstruction patients discharged for disability up to April 1, 1919 (5,070), approximately 41 were designated as hopeless or institutional cases, 510 were reported as in need of further training, while 4,519 were able to resume their old occupations or were not in need of training.[16]

Ward work.—Work in the wards was divided into ward handicrafts and ward academic work. The figures for the number of enrollments in all educational work comprised the number of enrollments on the first of the month plus admissions during the month. This method aimed to give full credit to the hospital for its educational work. The enrollments for ward handicrafts were as follows:[16]

	1918	1919					
	December.	January.	February.	March.	April.	May.	June.
Work on textiles (knitting, weaving, etc.)	991	2,413	3,612	4,786	8,537	9,507	8,145
Woodworking (carving toys, etc.)	550	941	1,808	2,439	2,596	2,684	2,144
Reed, cane, and fiber work	534	897	1,555	2,596	3,501	4,169	4,185
Work in applied pattern (lettering, etc.)	271	210	284	282	257	373	379
Metal work (jewelry, etc.)	204	489	1,124	2,363	498	992	626
Leather, cardboard, and binding	66	374	651	1,233	1,717	1,969	2,173
Work in plastic materials (pottery, etc.)	50	298	362	446	440	331	411
Unclassified enrollments	1,251	....	796	1,650	1,193	616	254
Total handicrafts	3,917	5,622	10,192	15,795	18,739	20,641	18,317
Total academic	569	972	1,521	3,194	3,552	4,961	5,172
Total ward work	4,486	6,594	11,713	18,989	22,291	25,602	23,489

The subjects and enrollments in ward academic for March are listed.[16]

Typewriting	440
Arithmetic	352
English	336
Reading	322
Spelling	223
Penmanship	208
Shorthand	190
Drawing	186
Music	81
Higher mathematics	68
Business English	62
Bookkeeping	60
Spanish	51
Agriculture (study)	48
Drafting	47
Braille reading	45
French	43
Telegraphy	23
Lip reading	16
Salesmanship	13
Speech correction	6
Italian	6
Science	5
Advertising	3
Geography	3
Commercial law	2
Civil service	2
Latin	1
Unclassified	332
Total ward academic	3,194
Total including handcrafts	18,989

Shop and school work.—The work in the shop and school was divided into three divisions, according to the Educational Officers' Handbook, namely: (1) General courses, which include academic and professional subjects; (2) technical courses, which include (*a*) shop and trade courses (electrician, machinist, etc.), (*b*) commercial courses (typewriting, shorthand, etc.), (*c*) agriculture (gardening, crop study, etc.); (3) recreational courses, which include drill and physical culture, prescribed by the ward surgeon.

The enrollment in shop and school subjects, as classified above, for seven months is as follows:[16]

	1918	1919					
	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1. General courses	2,439	3,168	5,845	7,045	7,620	8,056	6,502
2. Technical courses:							
(a) Shop and trades	2,010	2,973	4,611	7,018	8,718	8,467	7,183
(b) Commercial	1,117	2,013	3,276	4,713	5,055	4,721	3,885
(c) Agricultural	564	808	1,027	1,583	1,932	1,855	1,831
Total (a) (b) (c)	3,691	5,794	8,914	13,314	15,705	15,043	122,899
3. Recreational courses	1,633	2,616	3,261	5,569	7,033	8,149	6,908
Total	7,763	11,578	18,020	25,928	30,358	31,248	26,309
Total including ward work	12,249	18,172	29,733	44,917	52,739	56,850	49,798

Not all patients in the various reconstruction hospitals were eligible to the educational service for one or more of the following reasons: (1) Short-time patients (seven days or less)—these patients simply passed through the hospitals as a part of the process of demobilization; (2) patients in contagious wards in which workers were excluded; (3) patients severely ill and secondary surgical patients who were unable and too weak to work; (4) patients with psychopathic conditions of a character which made work impossible; (5) patients on furlough, absent from hospital, and absent without leave, but carried on hospital population.

For administrative reasons it was not deemed worth while to develop elaborate accounting systems to separate these patients from the hospital population. It is probable that in general these classes of ineligibles in base hospitals were extremely large. Therefore, conservatively estimated, from 50 per cent to 60 per cent of available or eligible patients were reached.

Type of cases reached by the education service.[16]

Orthopedic	5,016	Gastrointestinal	154
Pulmonary tuberculosis	3,139	Severe injury, face and jaw	120
Diseases—wounds	1,689	Venereal disease	68
Amputations	1,125	Skin diseases	68
Wound or injury of nervous system	837	Blindness	64
Functional neurosis	730	Deafness	34
Eye, ear, nose, and throat	536	Neurasthenia	32
Insanity	536	Speech defect	6
Gassed	323	Paralysis	2
Cardiovascular	313	Other general medical	1,326
Arthritis	246	Other surgical conditions	1,567
Nephritis	199	Convalescent	1,610

Before the armistice was signed approximately 13,000 disabled soldiers had been returned from the American Expeditionary Forces to the United States.[17] These were cared for in 16 general military hospitals, and those who needed it were given the benefit of the continued treatment in accordance with the plans for physical reconstruction. Following the armistice, the return of the sick and injured from overseas was expedited. From November 11, 1918, to May 1, 1919, approximately 110,000 disabled soldiers from the American

Expeditionary Forces returned to America. The Medical Department of the Army, therefore, secured facilities for the application of measures of physical reconstruction in the following additional hospitals:[18] Fort Sam Houston, Tex.; Fort Riley, Kans.; Camp Custer, Mich.; Camp Devens, Mass.; Camp Dodge, Iowa; Camp Gordon, Ga.; Camp Grant, Ill.; Camp Jackson, S. C.; Camp Kearney, Calif.; Camp Dix, N. J.; Camp Lee, Va.; Camp Lewis, Wash.; Camp Meade, Md.; Camp Mills, Long Island, N. Y.; Camp Sherman, Ohio; Camp Travis, Tex.; Camp Upton, Long Island, N. Y.; Camp Taylor, Ky.; Camp Pike, Ark. During the maximum of hospitalization 46 hospitals functioned in physical reconstruction. The peak in reconstruction work was reached in May, 1919, after which date there was a gradual decline in the numbers undergoing treatment.

SECTION OF CONVALESCENT CENTERS.

Following the signing of the armistice convalescent disabled soldiers of the American Expeditionary Forces were returned to the United States as convalescent detachments on a duty status.[19] These disabled soldiers were sent to convalescent centers nearest their homes in 19 designated training camps. This division was given advisory and administrative authority in the program of rehabilitation of the soldiers in convalescent centers. To properly administer the program of the application of active and passive exercise, curative work, and play, 14 medical officers were assigned to duty in the field as consultants by the authority granted to this division by the Surgeon General. From the time of the establishment of the convalescent centers in January, 1919, to their abolition on April 28, 1919, 47,858 convalescent soldiers received final hardening by educational training and physical exercises under the supervisory administration of this division.

SECTION OF PUBLICITY.

In addition to the compilation of various Government documents, setting forth the provision made for the benefit of disabled soldiers, sailors, and marines before and after their discharge, the Section of Publicity distributed other literature of a cheering character through the home service division of the American Red Cross, and in this way reached the families of the soldiers and the general public. Four mimeographed and illustrated bulletins [20] giving the complete account of the rehabilitation of soldiers in all the belligerent countries were prepared and distributed chiefly to medical officers of the Army. With the issue for May, 1918, these bulletins were discontinued and their place was taken by *Carry On*,[21] a monthly magazine edited by a board created by the Surgeon General. About 125,000 copies of each issue were published and distributed.

An indexed and annotated library was prepared for the officers of this division, containing the principal textbooks, periodicals, and other literature, in several languages, devoted to reconstruction. It formed a basis for smaller libraries sent to each hospital doing reconstruction work.

After the armistice the program of physical reconstruction was much modified by the Surgeon General. In the first place, the War Department amended its policy with regard to the Division of Physical Reconstruction, as outlined above [12] in the following manner: [22]

Subparagraph (*a*) is intended to provide for the complete cure of maximum restoration of men incapacitated because of military service. Subparagraph (*b*) is intended to provide for the retention in the service of such disabled men until such time as their maximum restoration has been obtained. There will be many cases that will not be benefited by further sojourn in hospitals, convalescent centers, or development battalions. These should be promptly discharged. The surgeon who has the case in hand must be the judge as to whether or not maximum restoration has been secured, or if, after treatment in the hospital in which the client is located is completed, the case will be further benefited by transfer to another hospital, convalescent center, or development battalion, cases which in the opinion of the surgeon will be further benefited should be promptly transferred. There will, furthermore, be many cases of disabled men who either possess funds or who have relatives or friends in position to afford them specialized care after discharge. In these cases disabled men may be discharged, but not until the responsible commanding officer has fully determined that continued treatment and cure are assured. The provisions of paragraph 2, Bulletin 36, as interpreted above, will govern until further instructions both for officers and enlisted or drafted men. In this connection convalescent centers and development battalions are intended for enlisted or drafted men only.

Class (*a*) and class (*b*) disabled soldiers were to be disposed of as follows:

Men who entered the service since April, 1917, who after hospital treatment are fit to return for full duty, will be sent for discharge to the demobilization center nearest their place of entrance into service, as indicated in Circular 106, War Department, December 3, 1918, amended by Circular 126, War Department, December 9, 1918.

Men, without regard to date of entry into the service, who have become disabled while in the service, or who had disabilities prior to their entrance which have been aggravated or made worse by service, said disabilities not being due to their own misconduct, will be transferred to convalescent centers, per Circular 90, War Department, November 25, 1918, providing further benefit can be expected by additional treatment, training, and hardening processes.

This modified regulation restricted the use of prevocational or vocational training as a therapeutic measure of remediable disabled men to the period of the curative treatment, often too short to be of any practical utility. And yet in May, 1919, it was found that 75,000 disabled men in the military hospitals had been enrolled in some form of educational or training service.[23] They had 25 to 35 days of technical training or educational instruction. Many had regained control of partially paralyzed muscles, stiffened joints were limbered up, unsteady nerves were steadied, and physical tone was secured through controlled diverting exercises.

COOPERATION WITH THE FEDERAL BOARD FOR VOCATIONAL EDUCATION.

Immediately after the President had signed the vocational rehabilitation act, the Surgeon General directed the Division of Physical Reconstruction to hold conference with the Federal Board for Vocational Education for the consideration of cooperation in the application of prevocational or vocational training as a curative measure. As a result of these conferences agreement was secured upon many points which it was believed would result in great benefit to the disabled soldier, both before and after his discharge from the Army. Among the articles agreed upon for cooperative aid of the disabled men a few are worthy of mention.[24]

In July, 1918, the Surgeon General directed the commanding officer of each hospital functioning in physical reconstruction to receive, give office space to, and facilitate the work of designated agents of the Federal board in affording vocational guidance and information as to their privileges under the Government in relation to convalescent disabled soldiers about to be discharged from the hospital. The Federal board had difficulty at times securing vocational guidance agents for all hospitals. Upon the request of the board the Surgeon General directed the chief educational officer of the hospital to act temporarily, in so far as his regular duties permitted, as the vocational adviser of the disabled soldier for the Federal board.[25]

It was found that Army Regulations [26] prevented Army officers from giving the full information concerning the disability of a soldier desired by the Federal Board and the Bureau of War Risk Insurance in the fulfillment of their respective duties intended to be of benefit to the soldier. The Surgeon General suggested a change, and in consequence, in December, 1918, the War Department amended paragraph concerned. The last sentence of the order of amendment reads:

> Nothing contained in this paragraph shall be construed as prohibiting the furnishing to the Federal Board for Vocational Education such information concerning a disabled soldier's medical history as may be considered valuable in his vocational training.

A committee composed of officers of the Division of Physical Reconstruction and representatives of the Federal board compiled approximately 50 pamphlets, designated Joint Series of Educational Guides, upon academic, technical, and general subjects, as guides for teachers and disabled men, both before and after discharge from the Army. Joint circulars were issued containing information for the disabled soldier upon his responsibilities and his privileges as provided by the Government for hospital treatment, for insurance and pension, and for vocational training. So far as possible these circulars were distributed to the disabled men at ports of debarkation, in hospitals, and in convalescent centers. Circular letters [27] were sent by the Surgeon General to the commanding officers and to the chief educational officers of all hospitals, directing them to inform all disabled men, personally or by bulletins, of the privileges and benefits provided for them by the Government and to emphasize the great benefits to be derived from vocational training in the hospital and after discharge under the jurisdiction of the Federal board.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

- Billings, Frank, Col., M. C., chief.
- King, Edger M., Lieut. Col., M. C., chief.
- Richardson, C. W., Lieut. Col., M. C., chief.

- Mock, Harry E., Col., M. C.
- Salmon, Thomas W., Col., M. C.
- Bordley, James, Lieut. Col., M. C.
- Evans, H. M., Lieut. Col., M. C.
- Greene, Charles L., Lieut. Col., M. C.
- Miller, Joseph L., Lieut. Col., M. C.
- Wood, Casey A., Lieut. Col., M. C.
- Woodson, Thomas D., Lieut. Col., M. C.
- Baldwin, Bird T., Maj., S. C.
- Bryant, John, Maj., M. C.
- Craig, C. B., Maj., M. C.
- Crane, A. G., Maj., S. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Erving, William C., Maj., M. C.
Granger, Frank B., M. C.
Haggerty, M. E., Maj., S. C.
Henderson, W. H., Maj., S. C.
Hunter, F. W., Maj., M. C.
Hutchings, R. H., Maj., M. C.
Johnson, F. W., Maj., S. C.
Keene, C. H., Maj., M. C.
McDill, John R., Maj., M. C.
Magnuson, P. D., Maj., M. C.
Monohan, A. C., Maj., M. C.
Murray, M. W., Maj., S. C.
Price, H. B., Maj., S. C.
Rinehart, Stanley M., Maj., M. C.
Rothschild, Marcus, Maj., M. C.
Amthor, F. R., Capt., Signal Corps.
Austin, Homer M., Capt., M. C.
Berry, Charles, Capt., S. C.
Brown, E. W., Capt., M. C.
Cason, T. Z., Capt., M. C.
Crummer, Leroy, Capt., M. C.
Ezickson, W. J., Capt., M. C.
Harlan, C. L., Capt., S. C.
Johnson, J. B. A., Capt., M. C.
Oliver, E. A., Capt., M. C.
Samuels, A. H., Capt., S. C.
Steele, G. H., Capt., S. C.
Stone, Calvin P., Capt., S. C.
Taylor, G. G., Capt., M. C.
Van Houton, Lyman H., Capt., S. C.
Boyd, J. T., First Lieut., S. C.
Stewart, Harry A., First Lieut., M. C.
Vaughn, S. J., First Lieut., S. C.
Whitley, W. R., First Lieut., M. C.
Willing, Charles, First Lieut., S. C.
Woodruff, Wm. H., Second Lieut., S. C.

REFERENCES.

(1) Letter from Surgeon General to Maj. Edgar King, M. C., August 22, 1917, subject: Assignment as Chief of Division of Special Hospitals and Physical Reconstruction. On file, S. G. O., 115568-11 (Old System).

(2) Correspondence, etc., on file, Record Room, S. G. O., Correspondence Files, 231 (Reconstruction Aides); 322.3 (Women's Aux. Med. Aides).

(3) Correspondence, etc. On file, Record Room, S. G. O., 353.91-1 (Physical Reconstruction).

(4) S. O., No. 227, W. D., September 29, 1917, par. 92, assigned Maj. James Bordley to duty in Washington. On file, Personal Report File, Commissioned Personnel Division, S. G. O.

(5) S. O., No. 249, W. D., October 25, 1917, par. 81, assigned Maj. Charles W. Richardson to duty in Washington. On file. Personal Report File, Commissioned Personnel Division, S. G. O.

(6) Memo. for Secretary of War, November 7, 1917, subject: Plan for Physical Reconstruction and Vocational Training. Weekly Report, March 29, 1918, Division of Special Hospitals and Physical Reconstruction, par. 1. On file, 353.91-1 (General).

(7) Annual Report of the Surgeon General, United States Army, 1918, 398.

(8) Memo. S. G. O., May 6, 1918. On file, Record Room, S. G. O., 024 (Division of Special Hospitals and Physical Reconstruction).

(9) Office order, No. 36, S. G. O., May 13, 1918. On file, Record Room, S. G. O., 024.7.

(10) Office order, No. 325, S. G. O., June 20, 1919. On file, Record Room, S. G. O., 024.7.

(11) Vocational rehabilitation act (Smith-Sears bill). Bull. No. 36, W. D., July 11, 1918.

(12) First indorsement, from The Adjutant General to the Surgeon General, United States Army. July 31, 1918. On file, Record Room, S. G. O. 353.91.1 (General).

(13) *Official Bull.*, August 1, 1918. (Published daily by Committee on Public Information, George Creel, chairman, Washington, D. C., 1918.) On file, Record Room, S. G. O.

(14) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1172.

(15) Circular Letter, July 31, 1918, S. G. O. On file, Record Room, S. G. O., 356.

(16) Educational service reports (statistical). On file, Weekly Report File, Record Room, S. G. O.

(17) Card file (statistical reports). On file, Hospital Division, S. G. O.

(18) Annual Report of the Surgeon General, United States Army, 1919, Vol. II, 1176.

(19) Memo. for the General Staff, attention of the Opr. Div. C. S. 5137, December 10, 1918. Subject: Modified Program for the Physical Reconstruction of Disabled Soldiers, par. 9; reply of The Adjutant General of the Army to the Surgeon General, December 19, 1918; circular letter No. 29, S. G. O., January 14, 1919, par. 10; circular letter No. 33, S. G. O., January 18, 1919. On file, Record Room, S. G. O., 353.91–1.

(20) Reconstruction Bulletin (Nos. I–IV, January, March, April, May, 1918). On file, Journal Reprint Section, S. G. O.

(21) *Carry on.* A magazine on the Reconstruction of Disabled Soldiers and Sailors. Vol. I, Nos. 1–10 (June to December, 1918, inclusive, and January to March, 1919, inclusive.) Published for the Surgeon General by the Red Cross Institute for Crippled, New York City.

(22) Circular No. 188, W. D., December 31, 1918. On file, Record Room, S. G. O., Document File.

(23) Educational Service report, statistical summary. Weekly Report File, Record Room, S. G. O.

(24) Report of conference, January 14, 1918, of S. G. O., with representation of 15 organizations, including Bureau of War Risk Insurance and Federal Board for Vocational Education. On file, Record Room, S. G. O., 353.91–1.

(25) Circular letter, No. 29, S. G. O., January 29, 1919, par. 8. On file, Record Room, S. G. O., 353.91–1.

(26) Army Regulations, 1916, par. 824; circular No. 132, W. D., December 11, 1918.

(27) Circular letters. On file, Record Room, S. G. O., 353.91–1.

CHAPTER XXI.

DIVISION OF AIR SERVICE MEDICAL.

Before our entrance into the World War no division having to do with aviation existed in the Surgeon General's Office, but some thought had been given there to what should constitute the physical requirements for admission to the aviation service (fliers) and medical officers in that office had been in correspondence with other members of the medical profession who were interested in the subject. A partial study had also been made of the physical requirements for aviators formulated by Great Britain, France, Italy, and Germany. Preparation for war by way of a Medical Aviation Service had gone no further than this when war came in 1914. When we entered the war, not quite three years later, our Air Service consisted of 65 officers and 1,120 enlisted men.[1] From these numbers the personnel increased by June 30, 1918, to the maximum strength of 14,230 officers and 124,767 enlisted men.[2] The number of men in or awaiting training for fliers increased from 100 to 18,000.[2] There were 4,872 officers and 46,667 enlisted men overseas.[2] The medical administrative problems comprised not only those common to all troops, viz, the sanitation and professional care of this considerable force located in many different stations of different types; but also the many special questions which arose in consequence of the fact that work in the air in war was the primary object of the service and that in this respect the Medical Department had no precedent to guide it through previous practical experience of its own.

ORGANIZATION OF AIR SERVICE MEDICAL.

In May, 1917, an officer of the Medical Corps was detailed, in addition to certain other duties, to take charge of the aviation work in the Surgeon General's Office, which included the physical examination of all applicants for duty with the Aviation Section, Signal Reserve Corps.[3]

Curiously enough the only authority for the organization of a separate medical service for aviation was a War Department special order assigning a medical department officer to duty as chief surgeon, Aviation Section, Signal Corps.[4]

In July, 1917, prior to which time there had been no office for the chief surgeon of the Air Service Medical outside the Surgeon General's Office, a room connected with the attending surgeon's office at 1106 Connecticut Avenue was obtained for his use, with an office force of one soldier and one stenographer.[5] As the work increased the functions of the Chief of the Air Service Medical became akin to those of a department surgeon. It should be noted that this largely independent status existed in none of the divisions of the Surgeon General's Office.

Owing to the necessity for more room to house the increasing personnel, at the end of August, 1917, the office of the Chief of the Air Service Medical was moved to the old Southern Railroad Building, 119 D Street NW., then the headquarters of the Aviation Section, Signal Corps;[5] shortly thereafter it was again moved to 613 G Street NW., and later to 940 F Street NW., where it remained until June 15, 1918, when it was moved to the first floor of the first wing of Building "D" of the temporary office buildings at Sixth and B Streets NW.[5]

Early in 1918 the office organization comprised the chief surgeon, an assistant, an executive officer, and five sections, as follows, each with an officer in charge: (1) Personnel; (2) property, supplies, and accounts; (3) hospitals; (4) reports and returns, including sick and wounded reports; (5) care of fliers.[6]

On May 11, 1918, the appellation "chief surgeon" automatically ceased to exist officially through the relief of the chief surgeon, Aviation Section, Signal Corps, and his detail to duty in the Surgeon General's Office in charge of the Division of Aviation,[7] which was simultaneously created.[8] This order was revoked on May 23, 1918, the division being known thereafter as the Air Service Division[9] (commonly known as Air Service Medical). On May 24, 1918, the Department of Military Aeronautics was established by order of the President.[10] The Air Service was thus completely separated from the Signal Corps; but at the instance of the director of military aeronautics, the Surgeon General directed that the work of the medical office continue as before;[9] that is, the administration of medical activities actually remained located and functioned in building "D," Sixth and B Streets NW. The officer in charge of the Division of Air Service Medical of the Surgeon General's Office was then appointed chief of a Medical Section (Advisory).[9] The functions of this section as then prescribed were to handle all matters relating to medical personnel, equipment, supplies and all other medical questions concerning aeronautics.[9] The office continued to be known as the Division of Air Service Medical of the Surgeon General's Office until after the armistice. On March 14, 1919, the division was abolished,[11] the medical functions of this service again being administered by a chief surgeon, Medical Division, Air Service, as had been the case in the beginning.

FIRST PROBLEM.

When war began, it was at once apparent that a large number of aviators must be secured for the Army in a very short time. The first medical problem, then, was to select thousands of men physically fit for fliers so that they might be placed in training immediately. New physical standards were required as well as new physical examination methods. The prescribed physical examination was promulgated by The Adjutant General in Form 609, in May, 1917.[12] Necessarily this was prepared hurriedly by the Medical Division, but it is worthy of note that the physical tests then required remained unaltered during the whole course of the war.

Physical Examination of Applicants for Detail in the Aviation Section, Signal Corps.

Place..

Date..

Name..

Rank and organization or status..

1. History of previous or present eye trouble..
....
....
....
....

2. Stereoscopic vision, if stereoscope is available..

3. Ocular movements...

4. Pupillary reactions..

	Direct.	Consensual.	Accommodation.
Right eye..............................	....	....	....
Left eye................................	....	....	....

5. Intraocular tension {Right...
Left...

6. Any visible lesion of eyes? {Right...
Left...

7. (*a*) Is ocular nystagmus present?...

8. (*b*) Does ocular nystagmus occur when eyes are turned easily to one side?..................

(*c*) Does ocular nystagmus occur when eyes are turned to the extreme side?...................

9. Field of vision {Right...
Left...

10. Color vision...
....

11. Muscle balance, at 20 feet (use phonometer or Maddox rod):

Hyperphoria..

Esophoria...

Exophoria...

[Second page.]

12. Visual acuity:

(*a*) Distance, at 20 feet {Right...
Left...

(*b*) Near point {Right..cm.
Left..cm.

13. Ophthalmoscopic findings (5 per cent euphthalmin dilation){Right..........................
Left............................

EAR.

14. History of ear trouble:

(*a*) Ever have ringing or buzzing in either ear, earache, discharge, or mastoiditis?........

(*b*) Ever have attacks of dizziness from any cause?..

(*c*) Ever been seasick?...... If so, how often,......; and how long does it last, ...

(*d*) Ever had a severe injury to head?..

15. (*a*) Appearance of external auditory canal{Right...
Left...

(*b*) Appearance of membrana tympani{Right..
Left..

(*c*) Hearing (watch, number of inches; {Right, /40 (40/40 normal)....feet.
whisper, number of feet)...... Left, /40 (40/40 normal)....feet.

NASOPHARYNX.

16. Condition of nares (if obstructed, state degree, character, and cause):

Right...

Left...

17. Condition of tonsils and history of attacks of tonsillitis:

Right...

Left...

18. Presence of adenoids..
19. Condition of eustachian tubes (if obstructed, state character and degree) after politzeration or per catheter..
20. Static tests, horizontal plane (shoes removed). Applicant to stand with knees pressed back, arms loose by side of body, eyes closed, inner margins of feet touching each other.........

....

21. Equilibrium (vestibular). Head tilted forward 30°. Eyes closed. Rotation nystagmus normal 26 seconds, a variation of 10 seconds allowable.
    (*a*) Right: Applicant to be turned toward his right, 10 turns in exactly 20 seconds, horizontal nystagmus to left for ......seconds.
    (*b*) Pointing tests:
        (1) Before turning—Right arm,......; left arm, ...
        (2) After turning 10 times in 10 seconds to right—Right arm, ...; left arm,.....
        (3) After turning 10 times in 10 seconds to left—Right arm,......; left arm,......
    (*c*) Falling tests:
        (1) Turn to right, 5 turns in 10 seconds—Falls to..............................
        (2) Turn to left, 5 turns in 10 seconds—Falls to...............................

....

....

22. Dynamic tests, horizontal plane (eyes closed and shoes removed). Applicant to walk on feet flat to floor straight forward 20 feet and back to point of starting. Repeat if necessary. Slight variation allowable if not constant ....

....

23. Height............inches. Weight............pounds.
24. Chest measurement: Expiration............inches; inspiration............inches.
25. Respiratory system..
26. Bones and joints..
27. Skin..
28. Nervous system..
29. Vascular system..
    (*a*) Pulse: Rate........per minute; quality..
    (*b*) Condition of arteries..
    (*c*) Blood pressure: Systolic....................; diastolic.........................
    (*d*) Heart..
    (*e*) Veins..
    (*f*) Hemorrhoids..
30. Digestive system..
31. Hernia..
32. Genitourinary system..
33. Urinalysis:
    Specific gravity..
    Reaction..
    Casts..
    Sugar..
    Albumin ....
34. Is the candidate physically qualified for aeronautical duty ....

....

....

[Back of form.]

The following instructions will govern the medical officers making the examination:

EYE DETERMINATION.

1. Question the candidate carefully regarding previous or present eye trouble, use of glasses, headaches, lachrymation, scotoma, and photophobia; also diplopia (muscæ volitantes panorama symptoms), glaucomatous symptoms, night blindness or asthenopia when not wearing correcting lenses. Any one of the latter group disqualifies, and also of the former group if marked. Note findings.

2. Stereoscopic vision is the ability to appreciate depth and distances by means of binocular single vision. Objects printed on the test cards furnished for use with the stereoscope are drawn to scale; the distance between corresponding points of similar objects are equal, between dissimilar objects unequal. They are seen at different apparent depths, the result of superposition of each two similar images in space; the less the distance between the objects, the nearer they appear to the observer's eyes; the greater the distance between, the farther away they appear. A normal eye can appreciate an apparent difference in distance between stereoscoped objects of 0.01 mm. Adjust the oculars of the stereoscope at their focal distance (15 cm.) from the glass stage and rotate by means of the milled edge on either ocular cup so that the interpupillary distance will be as great or greater than the distance between any two similar points or objects to be stereoscoped. With good illumination, have the candidate name the sequence of objects from front to rear as he sees them through the stereoscope. This should be done readily and without error, otherwise it is a cause for rejection.

3. Ocular movements are tested roughly by requiring both eyes of the candidate to be fixed on the examiner's finger, which is carried from directly in front to the right, to the left, up, and down. The movements of each eye must be regular and identical.

4. Pupillary reactions should be regular and equal in each eye when responding to (1) direct and (2) indirect light stimulation and (3) to accommodation. Face the candidate and place a card as a screen before both eyes. Uncover one eye after a short interval and allow light to shine in this eye. The resulting contraction of the iris of this eye is called direct. Repeat, but now observe the shaded eye. This reaction is indirect or consensual of the shaded eye. Repeat for the other eye.

With both the candidate's eyes open and uncovered, have him fix on a pencil held a few inches directly in front of him. Bring the pencil toward him until it nearly touches his nose. Both irides will contract, which is called the reaction to accommodation.

5. Intraocular tension is tested roughly by palpation. The candidate looking downward, palpate the eye through the upper lid with the index finger of each hand, and compare the tension with the other eye and with an eye believed to be normal. If not normal, it is a cause for rejection.

6. Any visible lesion of the eye is determined by having the candidate near to and facing a well-illuminated window and assisted by the use of a hand lens. The eyes should be free from disease, congenital or acquired, such as lesions of the cornea, iris, or lens, including affections of surrounding structures such as pathological conditions of the lachrymal apparatus, conjunctival deformities, or any other affection which would tend to cause blurring of vision if the eyes, unprotected by glasses, were exposed to wind or other unfavorable atmospheric conditions.

7. Ocular nystagmus is determined, and if it is rhythmical and occurs—(*a*) and (*b*)—on looking straight ahead or laterally 40° or less it is a cause for rejection.

(*c*) Spontaneous ocular nystagmus produced by extreme lateral sight, 50° or more, is not a cause for rejection, as it is found in the normal individual. It is usually manifested by a few oscillating lateral movements, never rotary, which appear when the eyes are first fixed in extreme lateral positions. Select a scleral vessel near the corneal margin as a point for observation.

8. Field of vision is tested separately for each eye. Place the candidate with his back to the source of light and have him fix the eye under examination (the other being covered) upon the examiner's, which is directly opposite at a distance of 2 feet. The examiner then moves his fingers in various directions in a plane midway between himself and the candidate until the limits of indirect vision are reached. The examiner thus compares the candidate's field of vision with his own and can thus roughly estimate whether normal or not. A restricted field of vision should be confirmed by the use of a perimeter, as it would then be a cause for rejection.

9. Color vision should be normal for red and green. A Jennings test set is preferred. If not available, then select a skein of any shade of red or green worsted and have the candidate select, in separate piles, all skeins containing red or green. If confusion, colored lights at 20 feet should be used as a test before rejecting.

10. *Muscle balance at 20 feet.*—A phorometer, with spirit level, Maddox rod, and rotary prism attached, should be used to determine the presence or absence of a muscular imbalance. Adjust the phorometer close to and in front of the candidate's eyes, at 20 feet distance from a point of light 10 mm. in diameter on the same level with eyes. Darken the room and arrange the prisms so that their bases are situated inward; two images of the light will then be seen displaced laterally. If on a level, there is a normal balance of the vertically acting extrinsic eye muscles or orthophoria; if not on the same level, there is vertical imbalance or hyperphoria, left if the left image is below,

right hyperphoria if the right image is below. Read off on the scale the amount necessary to bring the images on the same level.

Repeat the tests with the prisms, one up and one down. If the images now are directly above each other there is no lateral imbalance, but if laterally displaced and on the same side with the eye seeing each image, there is homonymous diplopia due to a lateral imbalance called esophoria. If the images are crossed there is exophoria. Read off on the scale the amount necessary (prism diopters) to bring them in the same vertical meridian. If not more than 1° of hyperphoria and more than 2° of esophoria or exophoria, the test is satisfactory.

11. *Visual acuity.*—(*a*) Acuity for distance tested at 20 feet from a well-illuminated Snellen test card, if less than 20/20 in either eye, tested separately, disqualifies.

(*b*) Near point or acuity for near vision is determined separately for each eye by requiring the candidate to read in a good light the Jaeger No. 1 test type, first gradually bringing the card toward the uncovered eye until the nearest point to the eye at which the test type still remains distinct is reached. The distance of this point from the anterior surface of the cornea, measured in centimeters, is the near point. Greater than 11 cm. at 20 years of age, greater than 13 cm. at 25 years of age, or greater than 15 cm. at 30 years of age disqualifies.

12. *Ophthalmoscopic findings.*—Drop one drop of a 5 per cent solution of euphthalmin in each eye. Have the candidate keep his eyes closed. After 15 minutes repeat the drops; then examine 15 minutes later. A pathological condition of the fundus, active or quiescent, is cause for rejection.

EAR DETERMINATION.

13. Abnormalities are cause for rejection.

14. Hearing should be normal for each ear. To determine this both the whisper and watch tests are used. After examining both external auditory canals and membrana tympani by means of a speculum and a good light (first removing any wax if present) for abnormalities such as small and tortuous opening, presence of pus, perforation, scars, retraction, or other evidence of past or present inflammation, which are causes for rejection, the candidate is required to stand at 20 feet from the examiner and facing away from him. An assistant closes the ear not under examination with his moistened index finger pressed firmly into the external auditory meatus. The examiner facing the back of the candidate exhales and then, with his residual air, whispers numbers, words, or sentences which the candidate should repeat. If unable to hear, the examiner will approach until the candidate does hear, the distance being recorded in feet. If less than 20 feet, it is a cause for rejection. A quiet room is essential.

The watch test is preferably made with a loud-ticking watch, such as the ordinary Ingersoll, which, while variable, should be heard at about 40 inches. Any watch used should have been previously tried out on at least five normal persons and the distance heard made a matter of record. The number of inches in distance heard by the candidate, eyes closed and opposite ear occluded, is taken as the numerator and the distance the watch should be heard as the denominator. This should be the equivalent of 40/40, otherwise disqualifies.

NASOPHARYNX.

15–18. This region should be carefully examined. If defects can be removed by operation, this should be required prior to completing the examination. If nonoperable or operation refused, it is a cause for rejection.

STATIC TESTS.

19. The position should be maintained for one minute without marked swing. Eyes closed.

EQUILIBRIUM (VESTIBULAR TESTS).

20. The nystagmus, past-pointing and falling, after turning, are tested. The turning chair must have a headrest which will hold the head 30° forward, a foot rest, and a stop pedal.

(*a*) *Nystagmus.*—Head 30° forward; turn candidate to the right, eyes closed 10 times in exactly 20 seconds. The instant the chair is stopped click the stop watch; candidate opens his eyes and looks straight ahead at some distant point. There should occur a horizontal nystagmus to the left of 26 seconds' duration. Candidate then closes his eyes and is turned to the left; there should occur a horizontal nystagmus to the right of 26 seconds' duration. The variation of eight seconds is allowable.

(*b*) *Pointing.*—(1) Candidate closes eyes, sitting in chair facing examiner, touches the examiner's finger, held in front of him, raises his arm to perpendicular position, lowers the arm, and attempts to find the examiner's finger. First the right arm; then the left arm. The normal is always able to find the finger. (2) The pointing test is again repeated after turning to the right, 10 turns in 10 seconds. During the last turn the stop pedal is released, and as the chair comes into position it becomes locked. The right arm is tested, then the left, then the right, then to the left until he ceases to past point. The normal will past point to the right three times with each arm. (3) Repeat pointing test after turning to the left.

(*c*) *Falling.*—Candidate's head is inclined 90° forward. Turn to the right, five turns in 10 seconds. On stopping candidate raises his head and should fall to the right. This tests the vertical semicircular canals. Turn to the left, head forward 90°; on stopping the candidate raises his head and should fall to the left. Unless each test is normal it is a cause for rejection.

Special Regulations No. 50, Aviation Section, Signal Corps, 1917, War Department, and Circular No. 2, War Department, November 1, 1916, and the physical requirements of recruits will govern 22 to 32, inclusive.

Immediate efficiency and ultimate economy were the controlling influences, from a physical standpoint, in determining the selection of personnel for training for fliers. The great number of applicants made facile the maintenance of high physical standards. It had been demonstrated already by our fliers that careful physical selection of fliers would minimize the expenditure of time and money, as it would avoid training large numbers of prospective fliers who, through physical handicaps, could not possibly render efficient service as aviators. In a word, the primary responsibility of the Air Service Medical, in the selection of fliers, was that no aviator should fail in his mission because of discoverable physical defects. With the determination of attributes other than the physical, the Air Service Medical was not concerned.

Early in 1917 the Aviation Board, created in 1916,[13] meeting in Washington, D. C., passed on practically all candidates for commission in the Aviation Section, Signal Corps. This board was unable to cope with the vast increase in the number of examinations incident to the expansion of the Aviation Section, and as a result other boards were appointed at various places throughout the country, the number ultimately being 67.[14] To perfect the standard of physical requirements tests were made universally the same. A medical officer from the Air Service Medical in Washington was sent to each of 35 cities in the United States to establish physical examining units for the examination of candidates for commission in the Aviation Service and to explain to members of each unit so established the requirements of the physical examination.[15] Specialists, experts in their various specialties, were selected as members of these units, and they were at once given intensive training for the purpose of establishing and maintaining a uniform technique.[16] By the methods adopted, within a few months the character of the examination was made exactly the same in all physical examining units.

To save time existing institutions, such as large hospitals and State universities, with their equipment, were utilized as centers for establishment of the various physical examining units.[17] In each case medical examining staffs made up largely of volunteers recruited from the ranks of eminent civilian consultants practicing near by were then organized. Some of these doctors were commissioned in the Medical Section, Officers' Reserve Corps, while others continued to serve as volunteers. This plan worked so well that within a few days after the arrival of the organizing medical officer from Washington the physical examining unit concerned would be actually at work examining candidates. By this method of decentralization the physical examination of thousands of candidates was made possible in a minimum of time. Once it was assured that a physical examining unit was equipped and capable of carrying on the physical examination according to the standards established full authority was vested in the officer in charge relative to its operation, but every effort was made to assist all units by occasional visits of inspection and by bringing to their attention from time to time pertinent information acquired as the result of further experience. Later, a military unit was organized in each of the 32 divisional camps to make the physical examination of enlisted candidates thereat.[18] By far the majority of applicants were civilians, however, and the 35 original physical examining units in the cities, each examining from 10 to 60 applicants a day, soon provided almost all of the thousands of men required.

A vast amount of professional service was rendered without pay by the civilian members of the physical examining units. These civilian doctors included many of the foremost specialists in the United States. In addition to serving as examiners they gratuitously performed many hundreds of surgical operations to enable candidates to qualify physically for the examination.

Members of the physical examining units organized in the cities also performed many other patriotic services of importance. They were instrumental in the calling of the public meetings under the auspices of the medical profession in each city concerned. While there was no lack of desire on the part of the young men of the country to enter the flying service, there was a striking need of authoritative information regarding the nature of the service and how to proceed to enter it. Enlightenment was afforded through the public meetings and otherwise by the members of physical examining units. Thus an adjuvant activity of their establishment was the stimulation of public interest in the flying service in all of the cities in which they were located. The interest aroused by work in the physical examining units also resulted in bringing into the Air Service Medical a large number of specialists whose training in the physical examination of candidates for aviators fitted them for a larger sphere of usefulness later in the care of the flier.

To one not familiar with the organization for examining candidates for fliers some confusion will inevitably result in respect to the duties of examining boards and physical examining units, respectively. It may be explained that the examining boards were constituted much as are such boards in the Army generally. They had a president, the senior officer, and two other members. One member was the representative of the Air Service and one a medical officer. According to the usual practice of such a board, the medical board would make all physical examinations of candidates, but in the present instance this would have involved special knowledge of ophthalmology, otolaryngology, neurology, and of the cardiovascular and respiratory systems. As it was manifestly impossible to find highly developed special knowledge in all of these fields in any one individual, the physical examining unit was substituted for the medical member of the board. Candidates were referred by the examining board to the physical examining unit and the final decision of the board as to the acceptability of each applicant was made only after receiving a complete medical report from the proper examining unit.

It has been noted that 67 physical examining units were finally established.[17] There was, of course, a like number of examining boards.[17]

The selection of fliers from the physical standpoint and the placing of them into training for fliers proved more complicated than is indicated from what has already been said. This was due to the fact that all men fitted for flying are not fitted for all classes of such duty. This being the case, the importance, from a military standpoint, of careful classification of fliers was thoroughly appreciated in the Air Service Medical. The work of the Medical Research Laboratory demonstrated that of each 100 carefully selected fliers only 61 are mentally and physically capable of attaining an altitude of over 20,000 feet with safety and 25 out of each 100 are physically and mentally unsafe above 15,000 feet, and 14 out of each 100 are physically and mentally unsafe at altitudes above 8,000 feet.[19] Translated into military requirements, this meant that 61 in 100 could do any type of air work, that 25 might do bombing, and that 14 should be limited to reconnoissance or night bombing. Physical classification in accordance with these facts was therefore carried out.[19]

PERSONNEL.

Medical officer personnel for the Air Service was obtained by request from the Chief of Air Service Medical to the Surgeon General. Such requests were of two classes, either for the commissioning of doctors whose names had already been selected by the Air Service Medical previously or for a certain number of unspecified medical officers. In the former case original commissions were issued to the doctors concerned and they were assigned immediately to an Air Service station as their first assignment. In the latter, medical officers already in the Army were transferred to an Air Service station. Medical officers once assigned to duty with the Air Service were not diverted from that service unless released by the Air Service Medical. Orders relating to such personnel were initiated in the Air Service Medical and on subsequent recommendation of the Surgeon General's Office. As practically no medical officers secured for the Air Service had previous military experience, classes of instruction for them were essential at air stations. Classes of instruction for medical officers and for enlisted men were conducted at all such stations save at very small ones where there was only one medical officer, but even at these instructions for the enlisted force was systematically afforded. Enlisted men and nurses for the Air Service were obtained in the same way as medical officers.

It was realized by the Chief of the Air Service Medical early in the war that in order to develop its efficiency to the maximum extent possible it was essential to study conditions affecting it in the theater of war and to profit from the experience of our allies there. Two medical officers therefore accompanied the then commanding general, Air Service, to France on a temporary duty status.[20] More specifically, the purpose of this visit was to obtain all available information relating to air medical service of our allies, largely as observed in actual operation at the front, and then to link this with the plan of the commanding general, American Expeditionary Forces, for an air service. Furthermore, their mission was to bring back to the United States all they had learned that this might be given practical effect in the way of preparation for service abroad. These observations had a potent influence on the development of our own air medical service. Other medical officers were sent to England, France, and Italy to acquire what they could for our service from practical experience.

Specialization of work went on among air medical officers until the personnel of a large field comprised a post surgeon; flight surgeon; a laboratory expert; an operating surgeon; eye, ear, nose, and throat specialists; internists; an orthopedist; and a sanitary engineer, in the majority of cases a sanitary officer; and a physical director.[21] This general plan of organization was extended to all fields where such extensive specialization was necessary, but naturally at the smaller fields, with only two or three medical officers, it was not possible to carry specialization far. Specialization, as exemplified by the large aviation fields, was identical with that practiced by the Medical Department generally during the war for aggregations of troops of like strength, save that the aviation fields because of their special function had flight surgeons and physical directors.

SUPPLIES.

The Air Service Medical maintained no supplies of its own, its supplies coming from sources common to the Army as a whole.[22] Requisitions for supplies from air stations were sent to the office of the Chief of the Air Service Medical. It was found expedient in the Air Service Medical to add wire cutters, axes, and fire extinguishers to the standard equipment of boxes for surgical dressings carried by ambulances.[23] The creation of auxiliary landing fields led to the adoption of aeroplane ambulances.[24] On the creation of the office of flight surgeon in May, 1918, these officers were furnished with a special standard equipment,[25] including such items as the Jones-Bárány chair, the Maddox rod and phorometer, the Jennings color chart, and other special diagnostic apparatus.

SELECTION OF SITES FOR NEW FIELDS.

Upon our entry into the war, flying fields existed at San Diego, Calif.; Mineola, Long Island; and at Essington, Pa.[26] Shortly thereafter sites were leased at Hampton, Va.; Mount Clemens, Mich.; Belleville, Ill.; and Rantoul, Ill.[26] Early in the war no medical officer was detailed on any board for the selection of sites for new fields.[27] In conformity, however, with action taken by the Aircraft Production Board, July 31, 1917,[28] a board, consisting of two Air Service officers and one medical officer, made a comprehensive study of the entire country with a view to the appropriate location of more flying fields. This board located fields at Millington, Tenn.;[27] Dallas,[27] San Antonio,[27] and Houston,[27] Tex.; and at Lake Charles, La.,[27] and inspected the fields in the Middle West where construction had already been started. The board also visited a Canadian field at Camp Borden, Canada.[27] Three fields were located in the neighborhood of Fort Worth, Tex.,[27] for the use of Canadians during the winter of 1917–18. In all, 20 fields were located by the above-mentioned board,[27] and about the same time 10 fields were selected without the advice of medical officers, but in no case was a field selected by a board against the advice of its medical members.[27]

HOSPITALIZATION.

The Air Service usually required hospitals of its own because its fields were far separated from other Army hospitals,[29] but at such stations as San Antonio and the divisional camp at Waco, Tex., the Army hospitals in the vicinity were also utilized very largely.[30] A hospital was recommended for Kelly Field near San Antonio in August, 1917, but the Hospital Division of the Surgeon General's office decided that no hospital was necessary here, as the sick could be taken care of at the base hospital at Fort Sam Houston.[31] In consequence, the only hospital facilities at Kelly Field during 1917–18 was the very small hospital on Field No. 2 (about 40 beds); in addition, a number of barracks had been converted into receiving wards for patients to be sent to Fort Sam Houston.[32] So of necessity thousands of patients had to be sent to Fort Sam Houston. At one time the Kelly Field command had a strength of approximately 35,000 men. In December, 1917, a 64-bed hospital was authorized for Kelly Field and was opened early in 1918. The new guardhouse here was converted into hospital wards in March, 1919.[33]

No medical officer was consulted regarding the plans for the early hospitals, and those adopted after an inspection of Camp Borden, Canada, were faulty, as the hospitals were entirely too small for their commands.[34] Originally intended for 40 patients, they proved adequate for only 24 when a minimum of floor space per patient was established by the Surgeon General's office. Hospitals of this type were built at Selfridge Field, Chanute Field, Hazelhurst Field, and at the two Wilbur Wright Fields. All these hospitals had to be enlarged later.[35] Forty-bed hospitals with adequate floor space for this number of patients were then built at Kelly Field No. 2, Dallas repair depot, and at Call, Rich, Park, Love, Carruthers, and Taliaferro Fields.

When the Medical Section of the Air Service was organized there was no separate division for hospital construction. When such a division was finally established in January, 1918,[30] the problem of enlarging the old type of 24-bed hospitals to 50 beds was carefully considered, and solved by adding an isolation wing of 10 beds and a 17-bed ward wing. Early in February, 1918, it was decided to adopt plans for a standard 50-bed cantonment hospital of the so-called gridiron type, comprising essentially a corridor with wings at right angles on either side.[36] Hospitals of this type were erected at nine fields. A standard 100-bed hospital of similar plan was then designed.[36] This was the type built at post fields and at the Army Balloon School, Arcadia, Calif. Infirmaries of 8 to 10 beds were also designed and constructed, as well as other hospitals varying in accommodation from 40 to 250 patients.[37] Standard plans for nurses' quarters, to accommodate 6, 12, or 30 nurses each, were also prepared.[37] Those of the six-nurse type for single unit fields were never authorized by the Secretary of War, so that nurses at these fields had to be quartered in hospital wards or in officers' quarters. Nurses' quarters of the large type were constructed at various fields. At Eberts Field the Red Cross built a nurses' dormitory at its own expense. Barracks for Medical Department enlisted men, varying in capacity from 30 to 200, were also built at a few fields when it became necessary to increase the capacity of their hospitals, this being done, of course, by removing the men from the hospital and quartering them in barracks constructed for them.[37] Separate buildings for morgues were erected at 25 fields and separate medical research laboratories at 15 fields. On the recommendation of food experts, plans were also prepared for an ice-cold storage building at each of the southern fields. Only one of these buildings was erected; this was at Eberts Field.[38]

Early in the winter of 1917–18 it became evident that it would be necessary to provide for the recuperation of Air Service personnel who had gone "stale" or who had become otherwise physically or mentally unfit. While many people living near aviation fields opened their homes to officers and men for this purpose, it was soon found that it was not advantageous thus to separate them from military and medical supervision. Special hospitals therefore were established for the care of such cases.[39] The Mary I. Bassett Hospital, at Cooperstown, N. Y., was opened for such patients in November, 1918; this was used extensively for overseas convalescents. Another place, more in the nature of a rest camp, was established at Warners Hot Springs, Calif. This was a substation of Rockwell Field, San Diego, and was also used for March Field, Riverside.

MEDICAL RESEARCH BOARD AND MEDICAL RESEARCH LABORATORY.

In the first year of the war it was found by the British air service that 65 per cent of all air casualties were due to the physical unfitness of fliers.[40] By careful study of the causes of accidents this percentage was reduced to 30 per cent in the second year of the war and to 12 per cent in the third year.[40] The causes of physical deterioration were various, but the chief was found to be the effect of altitude. The oxygen requirements of aviators were also found to vary. The anti-aircraft guns of the Germans necessitated flight to such altitudes as 16,000 to 20,000 feet, and as few aviators could be acclimated to such heights an artificial supply of oxygen became an absolute necessity. In consequence of these experiences, it was recommended by the chief surgeon, Air Service, that a board be appointed, with discretionary powers to investigate all conditions affecting the physical efficiency of pilots, to carry out experiments and tests at different flying schools, to provide suitable apparatus for the supply of oxygen, and to act as a standing organization for instruction in the physiological requirements of aviators. Following this suggestion, the Medical Research Board was established in October, 1917,[41] with the following departments: Cardiovascular, otological, physiological, psychological, ophthalmological, and psychiatric, each department being represented by a specialist in the given field. Plans were prepared for a central research laboratory at Hazelhurst Field, Mineola, Long Island, and its construction was completed in January, 1918.[42] Fifteen branch laboratories were finally established at the different flying fields.[43]

INSPECTIONS.

Inspectors from the office of the Medical Division of the Air Service conducted frequent medical inspections of the aviation stations.[44] These included all matters of Medical Department interest. The special objects sought were: (1) To instruct the post surgeons in general methods regarding administrative procedure, with a view to coordinating these methods and to procure uniformity in all stations; (2) to note the quality and the condition of the personnel at the various stations, being constantly on the lookout for men with particular qualifications, and to see that the personnel was being used to the best possible advantage; (3) to get the views of commanding officers in regard to medical personnel, to take into consideration their recommendations, explain the purpose in the special care of flying personnel, and to coordinate the work of the Medical Department with the executive branch of the Air Service in every possible way.

As occasion arose, regular sanitary inspections of Air Service stations were also made by the sanitary inspectors of the Surgeon General's Office.[45]

DEMOBILIZATION.

On November 11, 1918, as already stated, the medical department of the Air Service was being operated by the Air Service Division, Surgeon General's Office. At this date special medical boards were active at the different camps for the physical examination of applicants for aviation. At the 70 Air Service stations, 971 medical officers, 453 nurses, and 3,752 enlisted men were on duty.[46] Flight surgeons were under training for overseas duty, the medical research laboratory at Mineola was in full swing, and at several fields branch laboratories had been established for the classification and reexaminations of fliers. Demobilization began promptly after the signing of the armistice[46] with immediate discharge of aviator applicants when practicable. The medical work, now much reduced, was carried on by a few regular officers on duty with the Aviation Service and by such of the temporary commissioned medical personnel as desired to remain in the Army. As stations closed their medical personnel was transferred to active stations. Monthly progress in demobilization, from December, 1918, to December, 1919, inclusive, is shown in the following table:[46]

	Officers.	Enlisted men.	Nurses.
1918.			
December	290	334	58
1919.			
January	301	704	166
February	129	677	15
March	41	271	46
April	15	626	44
May	13	21	17
June	10	138	10
July	11	77	16
August	11	103	11
September	24	78	7
October	19	92	8
November	5	138	12
December	6	19	3

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Lyster, T. C., Brig. Gen., M. D., chief.
Truby, Albert E., Col., M. C., chief.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequency of service.

Crabtree, G. H., Col., M. C.
Gapen, Nelson, Col., M. C.
Wilmer, W. H., Col., M. C.
Bauer, Lewis H., Lieut. Col., M. C.
De Loffre, S. M., Lieut. Col., M. C.
Dreyer, G., Lieut. Col., R. A. M. C. (British Army).
Jones, Isaac H., Lieut. Col., M. C.
Lewis, E. R., Lieut. Col., M. C.
Seibert, E. G., Lieut. Col., M. C.
Sheep, W. L., Lieut. Col., M. C.
Butler, C. S., Maj., M. C.
Cleave, J. W., Maj., S. C.
Hitch, Edgar T., Maj., S. C.
Joseph, Don, Maj., M. C.
Martel, F. J., Maj., S. C.
Roby, A. A., Maj., S. C.
Dennis, F. L., Capt., M. C.
Nugent, E. T., Capt., S. C.
Todd, Wm., Capt., S. C.
Wharton, C. M., Capt., Air Service.
Wayland, Thomas A., First Lieut., M. C.
Knauss, Roy A., Second Lieut., S. C.
Stoddard, Charles J., Second Lieut., S. C.

REFERENCES.

(1) Report of the Director of Military Aeronautics, United States Army, to the Secretary of War 1918, 4. Government Printing Office, Washington, D. C.
(2) Ibid., 12.
(3) Letter to the Surgeon General from Maj. T. C. Lyster, M. C., April 28, 1917. Subject: Placing an Officer of the Medical Corps in General Charge of Physical Examination of all Applicants for Duty with Aviation Section, Signal Reserve Corps. First indorsement by the Surgeon General, April 30, 1917. On file, Record Room, S. G. O., 140868 (Old Files). S. O., No. 109, par. 2, W. D., May 11, 1917.
(4) S. O., No. 207, W. D., September 6, 1917, par. 4.
(5) Correspondence. Subject: Assignment of Rooms. On file, Record Room, Office of Chi of Air Service, General Files, 029.21 (Assignment of Rooms).
(6) Letter from Col. Theodore C. Lyster, M. C., to the Inspector General, April 30, 1918. Subject: Organization of Medical Department Attached to Aviation Service. On file, Chief Surgeon's Office, Air Service, 321.6.
(7) S. O., No. 111, W. D., May 11, 1918, par. 253.
(8) Office order, No. 33, S. G. O., May 11, 1918.
(9) Office order, No. 42, S. G. O., May 23, 1918.
(10) G. O., No. 51, W. D., May 24, 1918.
(11) Office order, No. 135, S. G. O., March 14, 1919.
(12) Copy of Form 609 (Physical examinations of applicants for detail in the Aviation Section, Signal Corps). On file, Office of Chief Surgeon, Air Service, 315 (General).
(13) S. O., No. 246, W. D., October 20, 1916.
(14) Letter from Maj. Theodore C. Lyster, M. C., attending surgeon, to the Surgeon General, April 28, 1917. Subject: Examining Boards, Aviation Section, Officers' Reserve Corps. On file, Record Room, S. G. O., Correspondence File, 140868–R (Old Files).
(15) S. O., No. 109, W. D., May 11, 1917. S. O. No. 155, W. D., July 6, 1917.

(16) Letter from chairman Medical Reserve Board, to Surgeon General of the Army, November 13, 1917. Subject: Selection of Examiners. On file, Chief Surgeon's Office, Air Service, 334 (General).

(17) List of physical examining units with examining boards, with location, given in Air Service, Medical, pages 44 to 54, inclusive. War Department, Air Service Division of Military Aeronautics. Washington, Government Printing Office, 1919.

(18) Memo. from Examining Board Section, Office of Chief Signal Officer, to chief surgeon, Aviation Section, January 14, 1918. Subject: Examining Boards at Divisional Camps. On file, Chief Surgeon's Office, Air Service, 334 (General).

(19) Air Service Medical, page 24. War Department, Air Service Division of Military Aeronautics, Washington, D. C. Government Printing Office, Washington, C. D.

(20) Confidential orders, No. 92, W. D., October 11, 1917, pars. 10 and 11.

(21) Memo. No. 79, S. G. O., Air Service Division, June 3, 1918. Subject: Duty of Personnel at Aviation Stations in Classifications and Care of Flier. On file, Chief Surgeon's Office, Air Service, 321.6 (General).

(22) Letters from the property officer, Air Service, to the Property Division, S. G. O. On file, Chief Surgeon's Office, Air Service, 444 (General).

(23) List of medical equipment for aero squadron, October 17, 1917. On file, Chief Surgeon's Office, Air Service, 444 (General).

(24) Letter from Director of Military Aeronautics to commanding officers of flying fields, July 23, 1918, Subject: Ambulance Plane. On file. Record Room, Office of Chief of Air Service, General Files, 452.1 (Ambulance Planes).

(25) Memo. from Lieut. Col. S. M. De Loffre, M. C., to the Property Division, S. G. O., May 28, 1918. Subject: Equipment for Flight Surgeons. On file, Chief Surgeon's Office, Air Service, 444 (General).

(26) Memo. from Director Military Aeronautics to Historical Branch, War Plans Division, General Staff, dated April 1, 1919. Subject: Record of Training Section of the Air Service. On file, Historical Branch, Army War College, A. W. C. 76–2421.

(27) Memo. from Col. George H. Crabtree, M. C., to Lieut. Col. W. S. Shields, March 8, 1919. Subject: Selection of Sites for Aviation Fields. On file, Chief Surgeon's Office, Air Service 201 (Crabtree, George H.).

(28) Memo. to Captain Edgar, August 1, 1917. Subject: Resolution Passed by Aircraft Production Board, July 31, 1917. On file, Record Room, Office of Chief of Air Service, General Files 686 (Miscellaneous Aviation Fields and Stations).

(29) Data concerning individual flying field hospitals. On file, Record Room, Office of Chief of Air Service, General Files 632 (General).

(30) Report on hospitalization Air Service, by Lieut. Col. S. M. De Loffre, M. C. On file, Historical Division, S. G. O.

(31) Telegram from department surgeon, Southern Department, to the Surgeon General, October 10, 1917. On file, Record Room, Office Chief of Air Service, General Files, 632.

(32) Letter from commanding general, Fort Sam Houston, Tex., to commanding general, Southern Department, April 1, 1918; and indorsements thereto. On file, Record Room, S. G. O., 632 (Kelly Field) (B).

(33) Telegram from director military aeronautics to commanding officer, Kelly Field, February 3, 1919. On file, Record Room, Office of Chief of Air Service, General Files, 627. (Kelly Field.)

(34) Extracts from Reports of Sanitary Inspections Made During the World War, 182–213 (Hospital Construction). On file, Record Room, S. G. O., 721.1.

(35) Memo. from Lieut. Col. Nelson Gapen, M. C., to Lieut. Col. G. H. Crabtree, M. C., November 13, 1917. Subject: Hospital Facilities at Certain Flying Fields. On file, Chief Surgeon's Office, Air Service, 632 (General).

(36) Letter from Chief Signal Officer to The Adjutant General, April 16, 1918, and indorsements thereto. Subject: Authority for Construction and Alteration to Various Hospital Buildings. On file, Chief Surgeon's Office, Air Service, 632 (General Plans). On file, Plans Division, Construction Service (Quartermaster Corps).

(37) Correspondence on infirmaries. On file, Record Room, Office Chief of Air Service, General Files, 632 (General).

(38) Letter from officer in charge of supply division, office of the Director of Military Aeronautics, to the officer in charge of construction, June 5, 1918. Subject: Ice-Cooled Refrigerator Plant. On file, Record Room, Office Chief of Air Service, General Files, 673 (Eberts Field).

(39) Memo. from Chief of Operations Section, office Director of Military Aeronautics, to Lieutenant Benham, Air Service, September 16, 1918. Subject: Rest Camps for Aviators. On file, Record Room, Office Chief of Air Service, General Files, 632.B (Hospitals).

(40) Air Service Medical, 95.

(41) S. O., No. 243, W. D., October 18, 1917, par. 113.

(42) Memo. from Maj. F. G. Seibert, M. C., Medical Research Board, to Chief Signal Officer, December 19, 1917. Subject: Medical Research Laboratory. On file, Record Room, Office Chief of Air Service, General Files, 702.3 (Hazelhurst Field).

(43) Memo. from Maj. Edward Burns, supply section, office of Director of Military Aeronautics, to Air Service Division, S. G. O., September 24, 1918. Subject: Construction of Sublaboratories. On file, Chief Surgeon's Office, Air Service, 632 (General).

(44) Memo. from Brig. Gen. Theodore C. Lyster, M. D., Chief, Air Service Division, to Col. George H. Crabtree, M. C., August 17, 1918. Subject: Medical Inspections. On file, Chief Surgeon's Office, Air Service, 333.1 (General).

(45) Report of sanitary inspections made by Surgeon General's Office. On file, Record Room, S. G. O., 721.1 (Name of Station) (B).

(46) Report on demobilization of medical personnel assigned to Air Service, from Col. Albert E. Truby, chief surgeon, Air Service, to the Surgeon General, February 10, 1920. On file, Chief Surgeon's Office, Air Service, 321.6 (General).

CHAPTER XXII.

DIVISION OF GAS DEFENSE.

PRELIMINARY WORK.

The question of responsibility for the supply of gas masks and other equipment necessary for offensive and defensive gas warfare, as well as for the training of personnel, was fraught with considerable confusion during the early part of the World War. The Medical Department became directly involved in the matter when the Board of Ordnance and Fortifications, at a meeting held on November 5, 1915, in considering certain respirators in use by the British, went on record as follows: [1]

> Certain practices in the present European war have indicated the necessity for providing some equipment of this kind which, being an entirely new development, does not at present devolve upon any of the supply departments, but, in the opinion of the board, the design and supply should not be left unassigned and should be assigned to the Medical Department.

An extract from the records of this meeting, including the paragraph quoted above, was submitted to the Surgeon General by The Adjutant General on November 18, 1915, for remark. On November 22, 1915, the Surgeon General concurred "in the recommendation contained in the extract from proceedings of Board of Ordnance and Fortifications." [2]

On December 7, 1915, The Adjutant General transmitted to the Surgeon General the information [3] "that the Secretary of War approves the recommendations of the Board of Ordnance and Fortification and the Surgeon General as to the development and design of respirators, but reserves his decision as to the department which will supply them until further report shall be received from the Surgeon General."

Following this communication the Surgeon General assigned a number of medical officers to duty with the British and French armies as observers on gas defense. Reports from these observers were received from time to time during 1916.[4]

The question of responsibility for the supply of gas masks and other gas-defense equipment was brought up again on February 14, 1917, when the Quartermaster General forwarded the following communication to the Adjutant General:

> The question of being prepared to issue gas masks and goggles to the Army in case the need therefor should arise having been brought to the attention of this office, information is desired as to which bureau of the War Department would be called upon to furnish these articles should issue of same become necessary.

This communication was forwarded by The Adjutant General to the Surgeon General, who replied on February 19, 1917.[6]

> The Medical Department would be glad to undertake the furnishing of gas masks and goggles for the Army, including the combatant forces, if it had sufficient funds and authority of law so to do.

The previous assignment of this duty to the Medical Department was apparently overlooked, or at least not mentioned in the present partial acceptance of the duty.

On April 7, 1917, the Ordnance Office [7] reminded The Adjutant General of the assignment to the Medical Department by the Secretary of War of the duty of supplying gas-defense equipment,[1] thus absolving the Ordnance Office from responsibility, so far as "developing this feature for the defensive purposes, although it has used masks in connection with the development, for offensive use, of asphyxiating and lachrymose gases."

This communication from the Ordnance Office prompted the following from the Quartermaster General to the Surgeon General: [8] "It is understood that your office has been charged with the procurement of a supply of gas masks."

To this the Surgeon General replied,[9] again apparently overlooking the earlier assignment of the task of supplying gas masks and other gas-defense equipment: "It is considered that gas masks are a part of the Army equipment. It is believed that the purchase of them more properly pertains to the Quartermaster and Ordnance Departments, and this office can not undertake to procure them."

The Quartermaster General then requested a decision from The Adjutant General as to whether the Quartermaster Corps or Ordnance Department was to make preparation for supplying gas masks.[10]

The matter of responsibility was definitely placed upon the Medical Department on May 4, 1917,[11] when The Adjutant General forwarded the following information to the Quartermaster General, the Chief of Ordnance, and the Surgeon General: "The Secretary of War directs that the Surgeon General be informed that his department will be charged with furnishing gas masks and other prophylactic apparatus for the Army."

On May 16, 1917, the responsibility was further cleared up by the following memorandum from the Acting Chief of Staff to The Adjutant General, transmitted on the same date to the Surgeon General by indorsement from The Adjutant General: [12]

> The Secretary of War directs that instructions be given for the supply of gas masks, steel helmets, chemical sprayers for cleaning trenches, and oxygen apparatus for resuscitating the wounded as follows:
>
> To the Surgeon General for the supply during the period ending June 30, 1918, of the following articles:

Gas masks	1, 100, 000
Chemical sprayers for cleaning trenches	8, 500
Oxygen apparatus for resuscitating wounded	1, 000

> To the Chief of Ordnance for supply during period ending June 30, 1918, of the following:

Steel helmets	550, 000

In the meantime actual work had been accomplished in another quarter. On April 6, 1917, a committee on noxious gases in warfare was formed in the National Research Council in conjunction with the Bureau of Mines of the Department of the Interior.[13]

Following the organization of this committee and the assignment of the Medical Department to the duty of procuring gas masks, the member delegated from this department became the representative of the Medical Department in all matters of gas defense, pending the organization of the Division of Gas Defense in the Surgeon General's Office.[14]

Further plans for the prosecution of work connected with gas defense are outlined in the following memorandum, under date of June 9, 1917, from the Surgeon General to the Secretary of War.[15]

Memorandum for the Secretary of War.

Subject: Laboratory for gas masks.

The committee on noxious gases of the National Research Council, of which committee Mr. Van H. Manning, Director of the Bureau of Mines, is chairman, has undertaken the establishment and operation of an extensive research into the use of asphyxiating shell gases in naval and military warfare.

This committee has perfected preliminary arrangements for the installation in a building loaned by the American Methodist University, Massachusetts Avenue extended, Washington, D. C., of a central laboratory to control this work. A large number of chemists and laboratories throughout the country have volunteered their services and will be directed through the central laboratory. A share of the expenses of the entire work will be borne by the Army, Navy, and Bureau of Mines. The committee on noxious gases has allotted to the Army and Navy the sum of $175,000 for carrying on this work. The committee has further recommended that $125,000 be paid by the War Department and $50,000 by the Navy Department. The allotment of the Navy Department of $50,000 was made by the Secretary of the Navy on June 6, 1917. It is strongly recommended that the allotment of $125,000 be authorized by the War Department for the purpose of carrying on these investigations, this amount to be immediately available.

The importance and necessity of thorough and adequate development of asphyxiating gases and means of defense and offense, both by the Army and Navy, need no emphasis.

The War Department is represented on the committee on noxious gases by Colonel Babbitt, of the Bureau of Ordnance, and by Major Williamson, of the Medical Corps.

The following resolution was adopted by the executive committee of the National Research Council and approved by the General Munitions Board of the Council of National Defense, and then forwarded to the Council of National Defense:

"*Resolved*, That the National Research Council recommends to the Council of National Defense, through the General Munitions Board, that a laboratory be established near Washington for the investigation of problems connected with the use of noxious gases in warfare; and that the sum of $175,000 be allotted from funds which may be available for the equipment, administration, and personnel of this laboratory, said allotment to be expended by the War and Navy Departments under the direction of the Bureau of Mines, chairman of the committee on noxious gases of the National Research Council."

This matter was presented to the Council of National Defense at its meeting on June 8, and referred to the Secretary of War, Secretary of Navy, and the Secretary of Interior for such action as they deemed necessary.

Attached hereto is a summary of the progress of the work to date.

On July 2, 1917, the National Research Council forwarded to the Secretary of War a memorandum stating that at a meeting of the French scientific mission, representatives of the Army and Navy, and members of the General Munitions Board, to discuss the gas question, certain signal points were developed. Among these was the following: "Organization plans for the gas service have already been partially worked out and it remains to draw the units of the organization together. The offensive branch of the gas service is handled by the Ordnance Department, the defensive by the Medical Department, the questions of research by the Bureau of Mines, and the Engineers will probably be charged with the actual handling of the material on the battle field." This memorandum was forwarded by The Adjutant General to the Surgeon General with the information that the action of the meeting, as reported in the memorandum, was approved. In further prosecution of the work in hand it was arranged that the officer in charge of the manufacture and production of gas masks, ordnance office, be commissioned in the Sanitary Corps and assigned to active duty at the medical supply depot, New York City, for the purpose of superintending the manufacture, purchase, and inspection of gas masks and other defensive apparatus.

ORGANIZATION OF DIVISION OF GAS DEFENSE.

By the summer of 1917 the work in connection with gas defense had increased to such extent that it was deemed expedient to organize a division in the Surgeon General's Office for the coordinated handling of all matters related to the duties imposed upon the Medical Department in this connection. Under date of August 31, 1917, therefore, the Surgeon General issued the following orders:[16]

ORDERS:

Under date of May 16 last the Secretary of War directed the Surgeon General to provide for the supply of gas masks, chemical sprayers for cleaning trenches, and oxygen apparatus for resuscitating wounded during the period ending June 30, 1918.

The duty of providing for the supply of these appliances, of repairing them, and of giving instructions in their use is performed by a special field service of the Medical Department, known as the Gas Defense, the principal office of which is located in this city. It comprises three branches, to wit: (1) Field Supply Section; (2) Overseas Repair Sections; (3) Training Section.

The Field Supply Section will purchase or manufacture the appliances named, inspect them, store them, and issue them as needed.

The Overseas Repair Sections will receive issues made in bulk from home country, test them, store them, and issue them to troops, as required; they will also be charged with the disinfesting and repair of used or injured masks abroad, including all necessary inspections and tests incident thereto.

The Training Section will provide instructions regarding the use of these appliances, the handling of gases used for training purposes, the training of officers and men in the use of gas-sampling apparatus, gas detectors, and other means of defense against gases, and will communicate the same to all concerned.

Col. Weston P. Chamberlain, M. C., until further orders, will be in charge of the Gas-Defense Service, with such commissioned and enlisted assistance as may from time to time be assigned thereto.

Until further orders there will be allotted to the Gas-Defense Service the following personnel of the Sanitary Corps: 1 major, 28 captains, 115 first lieutenants, 10 hospital sergeants, 64 sergeants first class, 118 sergeants, 71 corporals, 90 privates first class, 334 privates.

---------------------------------------,
Major General, U. S. Army, Surgeon General.

The work was prosecuted along these lines, with the necessary changes in personnel, until the end of June, 1918, when Gas-Defense Service ceased to be under the control of the Medical Department. This included not only gas masks for men but for "all horses and mules of combat divisions in France."[17]

FIELD SUPPLY SECTION.

The Field Supply Section of the Gas-Defense Service was charged with technical matters, procurement, inspection, and control.[16] It superintended the purchase, manufacture, and inspection of gas masks and similar appliances for the United States Army. A list of the articles which it supplied includes trench fans, chemical-testing tubes, vacuum bottles, glass jars for making analysis of gas, weather vanes, special overalls and suits for protection against certain gases, special gloves for handling articles which might come in contact with dangerous chemicals, and a specially prepared paste for rubbing on the body to protect it against various gases. It also provided supplies for the training camps, such as gas bombs, smoke boxes, and various articles for carrying on mimic gas warfare. The articles supplied by this section were not standard articles procurable in commercial markets, but were specially designed and manufactured or contracted for by the Gas-Defense Service and assembled in the gas-defense plant at Long Island City, N. Y., or in various plants under the direct supervision of the Gas-Defense Service.

The gas-defense plant at Long Island City was the outcome of a letter, November 17, 1917, from the officer in charge, Field Supply Section, Gas-Defense Service, stationed in New York City, to the Surgeon General, suggesting the establishment of a Government-operated plant for gas mask manufacture.[18] This was forwarded to the Secretary of War by the Surgeon General, through military channels, with recommendation of approval. On November 20, 1917, the following memorandum (War Department) was submitted to the Secretary of War, together with the plan for the Government-owned plant:[19]

> 1. This is a request, approved by the Surgeon General, for authority to proceed with the manufacture of gas masks.
>
> 2. On November 16, 1917, the Judge Advocate General approved the memorandum which held that the Surgeon General, through the Gas-Defense Service, was authorized to manufacture gas masks needed by the Army.
>
> 3. Pursuant to the memorandum you approved of the leasing of the Stewart Building for this purpose.
>
> 4. Attached hereto is a memorandum authorizing the Surgeon General's Department, through the Gas-Defense Service, to proceed with the manufacture of gas masks.

The Secretary of War immediately authorized the establishment of the Government-operated plant for the manufacture of gas masks in line with the plan submitted.[19]

This plant, at the time of the peak of production, had 4,691 civilian employees. From the time of the organization of the service by the Medical Department to the end of June, 1918, when it relinquished control, the following total production was accomplished:[20]

Tons of bleaching powder	112
Specially impregnated suits	262
Pairs of oiled gloves	354
Oxygen inhalators	1, 999
Trench fans	11, 103
Tubes sag paste	120, 000
Horse masks	154, 094
Extra canisters for masks	502, 898
Gas masks	1, 718, 632

Of the total number of gas masks, 1,432, 224 were delivered to the quartermaster at the port of embarkation for shipment overseas. The balance were used for experimental and training purposes in the United States.

THE OVERSEAS REPAIR SECTION.

On October 25, 1917, Overseas Repair Section No. 1 left for France with four officers and 110 men.[21] The duties of this section, according to the organization plan,[16] were to receive issues made in bulk from the United States, to test them, to store them, and to issue them to troops as required. The disinfection and repair of used or injured masks abroad, including all necessary inspections and tests incident thereto, constituted part of the responsibility of this section.

TRAINING SECTION.

The Training Section of the Gas-Defense Service was organized in response to the opening, during the summer of 1917, of the Gas-Defense School in connection with the School of Musketry of the Infantry School of the Army at Fort Sill, Okla.[22] On July 25, 1917, The Adjutant General directed the Surgeon General to submit the names of nine officers of the Medical Department with a view to the selection of three for duty as instructors in gas defense at that school.[22] This was promptly complied with.[23] From time to time officers reported for duty at the school, until, by October, 1917, all the divisions were provided with gas officers, and no further courses were held.

The Surgeon General, however, from the beginning, experienced difficulty in securing satisfactory personnel for this service.[24] On December 20, 1917, the Surgeon General wrote to The Adjutant General as follows:[25]

> A large number of men must be commissioned to care for the operation of the new plant authorized in the memorandum of the Secretary of War on November 20. This plant will employ a force of approximately 3,000 people, and all of the inspection work and much of the administrative details must be handled by commissioned officers. It is felt that eventually the whole plant may have to be put on a military basis with no civilian employees as administrative officers.
>
> The Gas-Defense Service should have absolute authority to obtain commissions and with such dispatch that men can be assigned within a week after the commission is requested. The Gas-Defense Service should also have authority to obtain promotions in the grades of the Sanitary Corps in accordance with the allowances authorized by the Surgeon General.

This request was denied on January 11, 1918.[27]

By the end of December, 1917, the trained personnel, which had been developed as part of the Sanitary Corps, consisted of 186 commissioned officers and 1,199 enlisted men.[27]

On February 27, 1918, the commissioned personnel of this section was transferred to the Engineers, and training in gas-defense methods was placed under the Chief of Engineers.[28]

On June 28, 1918, the Chemical Warfare Service was organized,[17] and the gas defense ceased to be a function of the Medical Department. All personnel, property, obligations, and funds were transferred to the new service.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

- Birmingham, H. P., Brig. Gen., M. D., chief.
- Chamberlain, Weston P., Col., M. C., chief.
- Lyster, William J., Col., M. C., chief.
- Williamson, Llewellyn P., Col., M. C., chief.
- Dewey, Bradley, Lieut. Col., S. C., chief.
  - Kremers, E. D., Lieut. Col., M. C.
  - Besse, A. L., Maj., S. C.
  - Eisenman, F. J., Maj., M. C.
  - Woodruff, J. C., Maj., S. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917 to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Brophy, Wm. E., Capt., S. C.
Dewey, F. A., Capt., S. C. (major, Chemical Warfare Service).
Dickinson, A. C., Capt., S. C.
Mayo-Smith, Richmond, Capt., S. C.
Noonan, W. J., Capt., S. C.
Puff, R. V., Capt., S. C.
Taylor, R. E., Capt., S. C.
Walton, J. H., Capt., S. C.
Babbit, J. S., First Lieut., S. C.
Balfe, T. W., First Lieut., S. C.
Blake, K. B., First Lieut., S. C.
Duff, L. B., First Lieut., S. C.
Eason, H. M., First Lieut., S. C.
Elliott, L. A., First Lieut., S. C.
Fleming, W. F., First Lieut., S. C.
Foster, H. B., First Lieut., S. C.
Gibson, Richard, First Lieut., S. C.
Herman, E. C., First Lieut., S. C. (captain, Chemical Warfare Service).
Huenick, H. L., First Lieut., S. C.
Kay, W. De Y., First Lieut., S. C.
McNeil, W. I., First Lieut., S. C.
Mitchell, J. H., First Lieut., S. C.
Mulford, W. J., First Lieut., S. C.
Pierce, E. P., First Lieut., S. C.
Prentice, P. B., First Lieut., S. C.
Rile, W. M., First Lieut., S. C.
Sheehan, C. V., First Lieut., S. C.
Stapleton, E. L., First Lieut., S. C.
Ősscher, R., First Lieut., S. C.
Watson, W. N., First Lieut., S. C.
Wolfe, J. S., First Lieut., S. C.
Zimmerman, Joseph, First Lieut., S. C.

REFERENCES.

(1) Memo. from Adjutant General to Surgeon General, November 18, 1915. On file, Record Room, S. G. O. 153462 (Old Files).
(2) Second indorsement, Surgeon General to Adjutant General, November 22, 1915. On file, Record Room, S. G. O., 153462 (Old Files).
(3) Fifth indorsement, Adjutant General to Surgeon General, December 7, 1915. On file, Record Room, S. G. O., 153462 (Old Files).
(4) Reports from observers on gas defense. On file, Record Room, S. G. O., 150021 (Old Files).
(5) Letter from Quartermaster General to Adjutant General, February 14, 1917. On file, Record Room, S. G. O., 156296 (Old Files).
(6) Second indorsement, February 19, 1917, Surgeon General to Chief of Ordnance. On file, Record Room, S. G. O., 156296 (Old Files).
(7) Third indorsement, Ordnance Office to Adjutant General, April 7, 1917. On file, Record Room, S. G. O., 156296 (Old Files).
(8) First indorsement, Quartermaster General to Surgeon General, April 9, 1917. On file, Record Room, S. G. O., 156296 (Old Files).
(9) Second indorsement, Surgeon General to Quartermaster General, April 12, 1917. On file, Record Room, S. G. O., 156296 (Old Files).

(10) Third indorsement, Quartermaster General to Adjutant General, April 14, 1917. On file, Record Room, S. G. O., 156296 (Old Files).

(11) Third indorsement, Adjutant General to Quartermaster General, Chief of Ordnance, and Surgeon General, May 4, 1917. On file, Record Room, S. G. O., 156296 (Old Files).

(12) Memo. from Acting Chief of Staff to Adjutant General, May 16, 1917; first indorsement, Adjutant General to Surgeon General, May 16, 1917. On file, Mail and Record Division, A. G. O., 2598068 (Old Files).

(13) Summary of the work of the Bureau of Mines on noxious gases, June 9, 1917. On file, Record Room, S. G. O., 156296 (Old Files).

(14) Orders (S. G. O.), April 7, 1917. Subject: Maj. Llewellyn P. Williamson, M. C. On file, Record Room, S. G. O., 50163 (Old Files).

(15) Memo. from Surgeon General to Secretary of War, June 9, 1917. On file, Record Room, S. G. O., 156296 (Old Files).

(16) Orders (S. G. O.), August 31, 1917. On file, Record Room, S. G. O., 201948 (Old Files).

(17) G. O. No. 62, W. D., June 28, 1918.

(18) Letter from officer in charge, Field Service Supply Section, Gas Defense, to Surgeon General, November 17, 1917. On file, Mail and Record Division, A. G. O., 426.4 (E. E.).

(19) Memo. War Department to the Secretary of War, November 20, 1917; approval by the Secretary of War, November 20, 1917. On file, Adjutant General's Office, 426.4 (E. E.).

(20) Weekly report, Gas Defense Service, Field Supply Section, June 29, 1918. On file, Weekly Report File, Record Room, S. G. O. (Gas Defense).

(21) Letter, from officer in charge, Gas Defense Service, to Surgeon General, October 5, 1917. Subject: Overseas Repair Section. On file, Record Room, S. G. O., 210189 (Old Files). Confidential Order No. 92, War Department, pars. 7 and 14, October 11, 1917. On file, Confidential Orders, Commissioned Personnel Division, S. G. O.

(22) Letter from Adjutant General to Surgeon General, July 24, 1917. Subject: Instructors at the School of Musketry. On file, Record Room, S. G. O., 193166 (Old Files).

(23) First indorsement, from the Surgeon General, United States Army, to The Adjutant General, August 2, 1917. On file, Record Room, S. G. O., 193166 (Old Files).

(24) Correspondence. Subject: Personnel for Gas Defense Service. On file, Record Room, S. G. O., 201948 (Old Files).

(25) Letter from Surgeon General to Adjutant General, December 20, 1917, pars. 4 and 6. On file, Adjutant General's Office, 426.4.

(26) Third indorsement, Adjutant General to Surgeon General, January 11, 1918. On file, Mail and Record Division, A. G. O., 426.4.

(27) Annual report of the Surgeon General, United States Army, 1918, p. 324.

(28) S. O., No. 48, W. D., February 27, 1918.

CHAPTER XXIII.

MUSEUM AND LIBRARY DIVISION.

Long before the World War the Museum and Library Division, located in the Museum and Library Building, constituted part of the Surgeon General's Office. (See Chart XXII.)

ARMY MEDICAL MUSEUM.

The Army Medical Museum was established in 1862.[1] The history of this institution up to our entry into the war (1862–1917) has been carefully prepared.[2] When the European war began it was recognized that there would be an unequaled opportunity for collecting pathological material for the Army Medical Department, and upon our own entry into the war the Museum immediately began to take on new life. Shortly after our declaration of war the Surgeon General issued a circular ordering that pathological material from the war, illustrating the effects of the disease and wounds upon human tissue, be collected and sent to the Army Medical Museum.[3] It was early recognized that a special unit should be organized and sent to France to collect pathological specimens, to supply the graphics of the movement of hospitals and other medical units, and to complete the histories of the medical and surgical cases by supplying moving pictures, still photographs, wax models, and colored sketches of these cases. In July, 1918, a request for such a unit came from the commander in chief, American Expeditionary Forces.[4] Therefore, Museum Unit No. 1 was organized and sent overseas.[5] Members of this unit visited practically every American hospital on the western front, obtained characteristic pictures of the work in each hospital, hundreds of pictures of actual operations in the field. Its photographic section brought back with it over 10,000 still negatives and twice as many prints, with many thousands of feet of moving pictures, illustrating every phase of activity at the front; in addition, the unit collected a large number of weapons and missiles. Between April 7, 1917, and April 7, 1918, over 13,000 pathological specimens, with over 21,000 protocols of autopsies, had been accessioned in the pathological department. Could this material be properly exhibited, it would require a building twice as large as the present Museum, while the entire Museum has been doubled by these accessions, numbering now over 100,000 pathological specimens.[6] Many thousands of gross specimens and histological slides were received from the camps and hospitals at home and abroad, covering all the important diseases and injuries observed during the war. As it came in, this material was promptly stored in proper receptacles until the close of the war, when the work of making preparations began. The largest number of specimens illustrated diseases of the respiratory tract, in particular influenza-pneumonia (several hundred specimens), tuberculosis, and the effects of war wounds (mainly amputated extremities), and of gassing.

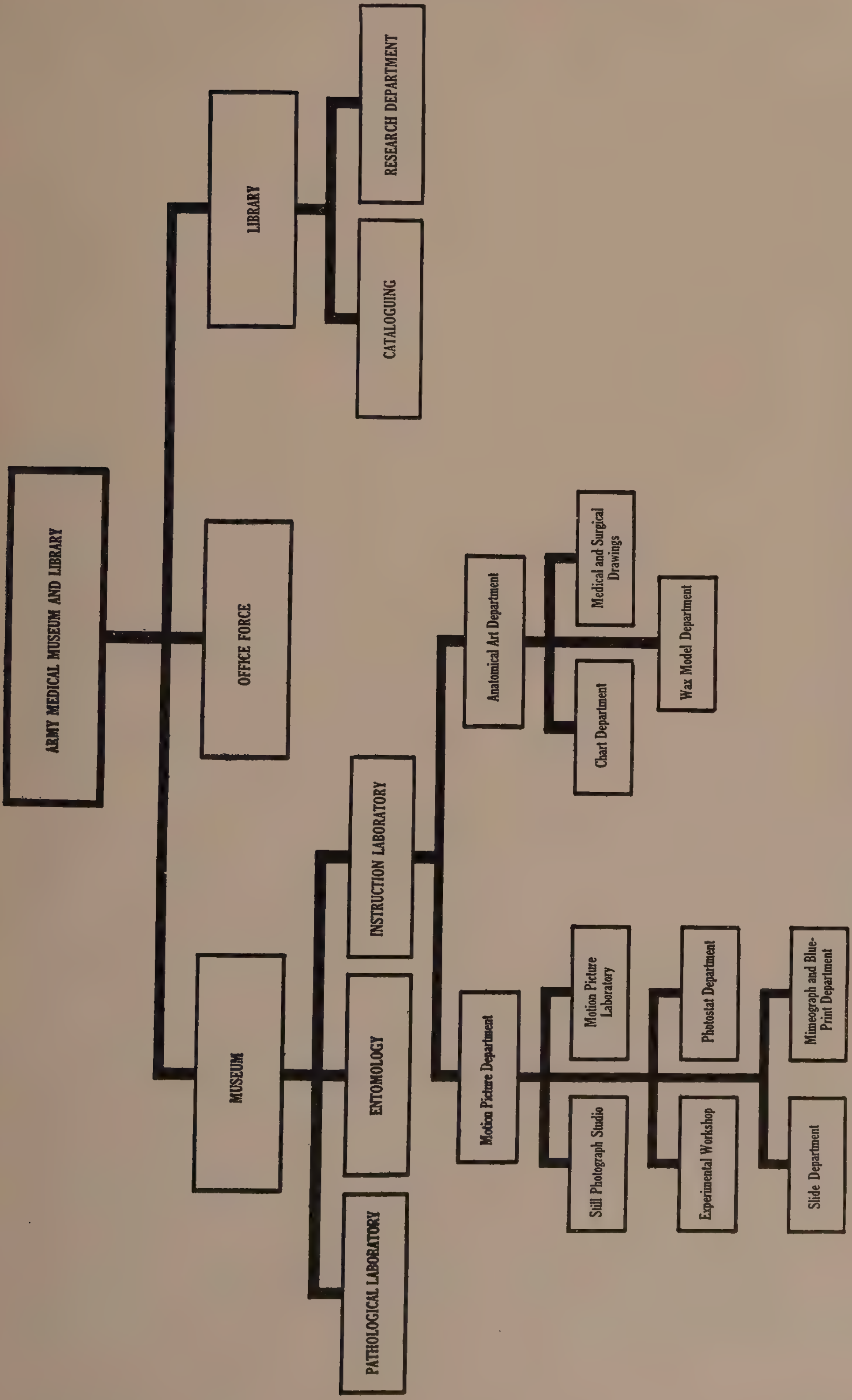
ARMY MEDICAL MUSEUM AND LIBRARY
LIBRARY
CATALOGUING
RESEARCH DEPARTMENT
OFFICE FORCE
MUSEUM
PATHOLOGICAL LABORATORY
ENTOMOLOGY
INSTRUCTION LABORATORY
Motion Picture Department
Still Photograph Studio
Motion Picture Laboratory
Experimental Workshop
Photostat Department
Slide Department
Mimeograph and Blue-Print Department
Anatomical Art Department
Chart Department
Medical and Surgical Drawings
Wax Model Department

CHART XXII.—Army Medical Museum and Library, June, 1918.

During the early period of the war it was discovered that very few of our medical officers from civil life had been shown how to make autopsies; consequently instruction in this matter had to be given. This was accomplished by circulars, bulletins, orders, and a follow-up system of correspondence. The members of Museum personnel in the department of pathology were trained in the methods of gross and microscopic pathology through an arrangement made by the Surgeon General with the Superintendent of the Government Hospital for the Insane (St. Elizabeths), Washington, D. C., whereby the autopsy service and pathological laboratory of that institution were largely placed under control of the Museum pathologists.[6] Several of the personnel were constantly on duty at the laboratory; autopsies in number were performed weekly, this training being set off by lecture courses. By these means it was possible for the Museum officers to accession promptly all material received, to trace lost specimens, and to check histories and protocols. After the signing of the armistice the pathological material began to come in in large quantities and the routine work of cataloguing went on apace in spite of diminished personnel. The specimens were dissected and displayed so as to show not only the wound or pathological lesion, but also to suggest the best line of treatment. Before being permanently mounted and indexed, every gross specimen was photographed, and photomicrographs were made of unusual slides of pathological material. Thus every effort was made to render this large mass of pathological material available for study by the students of pathology and to save for future use the experiences of this war. In order to make room for the ultimate exhibition of this large amount of material, it was necessary to rearrange the cases and specimens of the Army Medical Museum with a view to economy of space. This was ultimately accomplished by segregating the library personnel and material mainly on the west side of the building, while the Museum controlled the rooms and corridors of the east side.

Autopsies were conducted regularly by one of the Museum pathologists at Walter Reed General Hospital, and at the Government Hospital for the Insane (St. Elizabeths), which were attended by the Museum personnel and the classes of the Army Medical School, and courses of 10 practical lectures, each on pathology, were delivered to the monthly classes of military surgeons at Cornell University Medical College, New York City. A valuable study was made of the military aspects of status lymphaticus. Dissections of complex pathological specimens were made for the Museum; at St. Elizabeths Hospital and at Camp Wheeler there were prepared, by means of a special incision following the bronchial tree from behind, remarkably complete specimens of influenza-pneumonia, with corresponding sets of historical slides of all the affected organs, and a valuable series of histological preparations from fatal cases of salvarsan poisoning. As a result of the teaching conducted in the department of pathology, the Museum adopted the plan of presenting the whole pathological picture of a disease rather than portions of the main lesion. Thus the pneumonia specimens included not only those from both lungs but also lesions in the pharynx, larynx, trachea, bronchi, stomach, lower ileum, spleen, bone marrow, liver, and kidney.

In addition to the department of pathology and accessions, the Museum included a department of still photography, moving pictures, anatomical and wax models, veterinary medicine, anatomical art, and entomology.

The photographic department had long existed in the Museum prior to the recent war. Following the Civil War period this department made valuable contributions to photography and microphotography, many of which are found reproduced in the different volumes of the Medical and Surgical History of the War of the Rebellion. After our entry into the European war, this department was greatly enlarged, and through the photographic section of the Museum Unit No. 1, operating in France, collected many thousands of negatives and prints for historical purposes. This department also made enlargements, lantern slides, photostat prints, photomicrographs, and radiographs, and was charged with filing and indexing the many photographs taken by Medical Department and Signal Corps artists and forwarded to the Museum. Many thousands of X-ray negatives were received from the military hospitals in this country and France, a collection destined to be of greatest importance to radiologists. Aside from X-ray negatives, there were between 50,000 and 70,000 negatives of photographs of medical activities during the war period.

Some months after the declaration of war, a moving-picture department was established in the Museum as part of the unit known as the "instruction laboratory," a field organization attached to the Museum and under the direction of an officer of the Sanitary Corps, who in August, 1918, was designated official photographer for the Medical Department.[7] During the period of the activity of this department no less than 137 different subjects were filmed. It was soon found that these films could be made very useful for instruction purposes in camps, hospitals, and schools, and for the propaganda against venereal disease. After the armistice this work of public instruction ceased and was taken over by the Public Health Service.[8] Meanwhile the films manufactured by the instruction laboratory during the war period were kept in circulation and were lent for educational purposes to civilian institutions as well as to branches of the military and public-health service. These films were loaned without charge for two weeks to medical societies, colleges, and preparatory schools.

Finding that lantern slides were inadequate for lecturing on military orthopedic surgery to large audiences at Fort Myer, an officer of the Division of Orthopedic Surgery hit upon the plan of using moving pictures for this purpose. Some 35,000 feet of film were thus produced at the Army Medical Museum, covering 10 lectures on (1) the anatomy and physiology of the foot and leg, (2) footgear and foot inspection, (3) foot strain and flat-foot, (4) foot disabilities and their treatment (including trench foot), (5) splints for transport, (6) tendon and muscle transplantation, (7) bone grafting, (8) application of the temporary pylon for the amputated, (9) the paraffin-plaster socket for the application of artificial legs of the effect of posture on the thoracic and abdominal organs, and (10) osteoclasis and osteotomy.

Two high-class wax modelers were brought into the Museum service, one of them being detailed abroad, where valuable work was done in making models of conditions arising through gassing, war wounds from high explosives or other missiles, dermatological lesions, venereal specimens, X-ray burns, and miscellaneous pathological specimens.

The first anatomical artist reported for duty on December 12, 1917, and immediately began to make 12 charts, representing orthopedic surgery and a number of pen-and-ink drawings for *The Military Surgeon.* Owing to the large demand for such material, several artists were soon added and the work of the department soon increased far beyond the capacity of the personnel. Hundreds of charts and lantern slides were made for the Orthopedic Division of the Surgeon General's Office, for the Commission on Training Camp Activities (Army and Navy), and for the Army Medical Museum proper. Special instruction was given to some of the men in dissecting, hospital experience, didactic anatomy, first aid, and special pathological delineation. By July, 1918, the personnel of this section included 30 men, some of whom were attached to the general hospitals, where they made valuable drawings and paintings for surgical operations performed. Later, members of the art unit made 150 water-color drawings of the pathological effects of gassing and oil paintings of the different general officers of the Medical Department. Toward the end of the war members of this personnel made valuable pictures of specimens of influenza-pneumonia and of the pathological effects of gassing. Several hundred colored and uncolored protocols were forwarded from the Western Front.

The identification of mosquitoes, flies, and other insects infesting the Army posts and camps was made a definite part of the regular program of war work of the Army Medical Museum in October, 1917.[9] Up to November, 1918, identifications of disease-bearing mosquitoes had been made in all the camps and stations except eight.[9]

With the reorganization which followed the armistice, the Museum activities were merged with those of the Division of Infectious Diseases and Laboratories. (See Chart No. XXIV.)

LIBRARY OF THE SURGEON GENERAL'S OFFICE.

In the Manual for the Medical Department [10] it is stated that "the educational duties of the Medical Department are of a twofold nature—to the public, and to the military services, Regular, Volunteer, and militia. The connection with public education is maintained through the library of the Surgeon General's Office and the Army Medical Museum."

The scope and facilities of the library are described as follows: [11]

> This has been characterized as "the great, central, medical library of reference of the Nation" (6 Comp. Dec. 740). Under the provisions of the act of March 3, 1901 (31 Stats. 1039), facilities for study and research therein are afforded to scientific investigators, students, and graduates of institutions of learning in the several States and Territories as well as in the District of Columbia; and its material, under suitable rules and regulations, is available for loan to such persons, and to schools, societies, and public libraries in every State of the Union. It consists now of over half a million books and pamphlets, all of which are catalogued and arranged for ready use. Every year a volume of the Index Catalogue is prepared, which, as it deals with both subjects and authors, is itself a comprehensive book of reference. The Index Medicus, published monthly by the Carnegie Institute, is based on the new additions to the library and gives a monthly bibliography of medicine and the allied sciences.
>
> Books that can be readily replaced will be loaned to medical officers of the Army, who will be held responsible for the safe return of the volumes within two weeks from the day of their receipt. In special cases this time may be extended.

During the war period the librarian, who had been assigned to this detail early in 1913, was on continuous duty, and with the cooperation of the library force was able to carry out the intention of these paragraphs without difficulty.

The position is an important one and at the same time a pleasant one, since it brings the library in closer touch with the medical profession, particularly with members thereof who are engaged in research work and investigation. There is perhaps no closer lien between the Medical Department of the Army and the medical profession of the United States than the library of the Surgeon General's Office.

During the fiscal year 1917–18, 547 books and 5,890 pamphlets were added to the library collection, and during the year 1918–19, 2,656 books and 8,923 pamphlets, so that at the end of the fiscal year 1918–19 the library contained 198,900 bound volumes, 35,092 unbound volumes, and 361,455 pamphlets; in all a total of 595,447 volumes and pamphlets with 5,631 portraits of physicians, 136 medical engravings and prints, and 316 medical caricatures.[12] The number of current medical periodicals received in the library at this date was 1,568, of which 1,480 were kept on the open shelves in the reading room.[12]

The outstanding feature of the library is its unrivaled collection of medical periodicals and serials, including public documents of board of health and other national and official bodies. The war had a remarkable effect upon publications of this kind. Under the stress of war-time conditions, the medical periodicals of Great Britain, France, Russia, and the Scandinavian and Balkan countries became sadly diminished in quality and in some cases difficult to obtain. The medical literature of Belgium was practically extinguished. The medical periodicals of the Central Powers, on the other hand, were kept up without intermission, and with no apparent falling off in quantity or quality. While these continued to flow into the library with regular sequence during the first part of the war period, a falling off began to be noticeable toward the end of 1915, and early in 1916 the German medical periodicals ceased to reach us in any regular manner. It became the duty of the library, therefore, to make such arrangements as it could to keep up the files of these periodicals, since the indexing and classifying of the periodical literature of medicine had been the main functions of this library after the inception of its Index Catalogue. Through the Secretary of State arrangement was made by which a large number of German medical periodicals were purchased and sent to the library through the State Department.[13] Through the courtesy of the librarian of the Boston Medical Library and the editor of the *Journal of the American Medical Association* such German periodicals as were not contained in these invoices were sent to the librarian in packages, and the contents were indexed and classified by the library force, after which periodicals were returned to the lenders. Yet, in spite of all these expediences, many important periodicals were missing and many individual numbers were lacking from the files for 1915–1918. When the librarian went overseas in the fall of 1918, therefore, he made every effort to secure the missing files through booksellers in Paris and London, and eventually, through the courtesy of Messrs. Kegan Paul, Trench, Trubner & Co. (London), he was able to effect an arrangement for the purchase of German medical periodicals via Switzerland, these periodicals being transmitted directly to the Surgeon General's library by the London importers. In this way the files of most of the missing German periodicals and serials for 1915–1919 were obtained. Through the Index Medicus this literature was published in classified form, a large part of it being contained in the War Supplement of this journal (1914–1918), published in 1918.

During the war period the library was freely consulted by the many officers on duty in the Surgeon General's Office, and every effort was made to assist them in special work through the use of the subject bibliographies in the library, the loan of books, pamphlets, and journals, and the personal help from the library force.

Through a special order of The Adjutant General[14] the librarian was detailed as the executive officer of the board "to collect and prepare material for the Medical and Surgical History of the American participation in the European war." In connection with this work a glass case exhibit of historical items, illustrating the progress of military medicine, through the ages, was made at the instance of the librarian, and placed in library hall. This exhibit included, among other things, groups of books published in aid of the medical conduct of various wars by medical officers of the Army and civilian physicians, photographs of distinguished medical officers of different armies, and various photographs and objects illustrating the history of military medicine.

The extent to which the war-time service of the Surgeon General's library has been appreciated by the medical profession is evidenced by the fact that in the spring of 1917 the appropriation made by Congress for the purchase of books by the library was doubled for the ensuing fiscal year, thus placing the library in position to meet the obligation in regard to the huge amount of foreign medical literature accumulated in Europe during the war period.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

MUSEUM.

Craig, C. F., Col., M. C., chief.
Owen, W. O., Col., M. C., chief.

Taylor, R. T., Lieut. Col., M. C.
Allen, H. R., Maj., M. C.
Cattell, Henry W., Maj., M. C.
Coupal, J. F., Maj., M. C.
Evans, Thomas L. W., Maj., S. C.
Herrick, C. Judson, Maj., S. C.
Kinyoun, J. J., Maj., M. C.
Oliver, Jean, Maj., M. C.
Ross, Robert, Maj., S. C.
Shufeldt, Robert W., Maj., M. C.
Haas, S. L., Capt., M. C.
Schwartz, W. T., Capt., S. C.
Silvester, C. F., Capt., Infantry.
Wallis, James F., Capt., M. C.
Wilson, J. F., Capt., M. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the heads of the division, and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Bower, Morris L., First Lieut., S. C.
Ellis, Edward B., First Lieut., S. C.
Finney, W. P., First Lieut., M. C.
Hawkes, E. W., First Lieut., S. C.
Lewis, Nolan D. C., First Lieut., M. C.
Müller, H. R., First Lieut., M. C.
Wallach, Charles W., First Lieut., S. C.
Berg, Franz F., Second Lieut., S. C.
Garrity, R. F., Second Lieut., S. C.
Godwin, Francis W., Second Lieut., S. C.
Hirliman, Charles, Second Lieut., S. C.
Hollis, Raymond A., Second Lieut., S. C.
Hoskins, E. R., Second Lieut., S. C.
Matteson, Bartow V., Second Lieut., M. T. C.
Terry, Paul H., Second Lieut., S. C.
Ewing, James, Contract Surg.
Glushak, L., Contract Surg.

LIBRARY.

Noble, Robert E., Maj. Gen., M. D., (librarian) chief.
Winter, F. A., Brig. Gen., M. D., (librarian) chief.
McCulloch, Champe C., jr., Col., M. C., (librarian) chief.
Straub, Paul F., Col., M. C., (librarian) chief.

Garrison, Fielding H., Lieut. Col., M. C.

REFERENCES.

(1) Circular No. 2, S. G. O., May 21, 1862.
(2) Lamb, D. S.: The Army Medical Museum—A History. *Washington Medical Annals,* January, 1916, xv, 1.
(3) Letter from Surgeon General to officer in charge Army Medical Museum, April 3, 1918. Subject: Neuropathological Material. On file, Record Room, S. G. O., 702.1.
(4) Courier cablegram No. 7, July 20, 1918, from the commander in chief, A. E. F., to The Adjutant General of the Army, par. 2. On file, Record Room, S. G. O., Cablegram File.
(5) Letter from Surgeon General, August 5, 1918, to commanding officer, Museum Unit No. 1, Army Medical Museum, Washington, D. C.; memo., Surgeon General from curator of Army Medical Museum, August 6, 1918; S. O., 186, W. D., August 9, 1918, par. 461; letter to Surgeon General from commanding officer, Museum Unit No. 1, August 10, 1918. On file, Record Room, S. G. O., 322.3 (Museum Unit No. 1) (V).
(6) Weekly reports from Maj. C. Judson Herrick, S. C., August 8 and 22, 1918. On file, Weekly Report File, Record Room, S. G. O.
(7) Office order No. 79, S. G. O., August 14, 1918. On file, Record Room, S. G. O., 201 (Evans, Thomas L. W.).
(8) Bull. No. 43, W. D., Chap. XV, secs. 2–7, p. 56, July 22, 1918.
(9) Report on mosquito identification in connection with the work of the Sanitary Division for the year November 1, 1917, to November 1, 1918, by Dr. C. S. Ludlow, entomologist. On file, Historical Division, S. G. O.; Report of the Surgeon General, United States Army, 1918, 277; 1919, Vol. II, 1066.
(10) Manual for the Medical Department (1916), Article II, par. 131, p. 56.
(11) Ibid., pars. 132 and 133, p. 56.
(12) Annual Report of the Surgeon General, United States Army, 1918, 432, and 1919, Vol. II, 1257.
(13) Correspondence, librarian, Surgeon General's Library, with State Department, through the Secretary of War. On file, Chief Clerk's Office, Army Medical Museum and Library, 294.
(14) S. O., No. 198, A. G. O., August 23, 1917. On file, Record Room, S. G. O.

CHAPTER XXIV.

BOARD OF PUBLICATIONS.

The Board of Publications of the Surgeon General's Office was the war-time expression of the censorship long exercised over the publications of members of the Medical Corps. As early as 1890, medical officers were required to submit to the Surgeon General for authority to publish all papers dealing with military questions:[1]

> (*a*) Special reports on medical, surgical, or sanitary subjects, when involving only professional interests, and when based on official records or on experience gained in the discharge of official duties should be sent to the Surgeon General through the chief surgeon. If a medical officer desires to publish a paper of this character, request for authority to publish should be made to the Surgeon General. On the other hand, if an officer has written on a subject which is outside of his official work and does not involve reference to official records there is no need to submit the paper to the Surgeon General.

Such communications were submitted, as a rule, to members of the corps who, by virtue of experience in the particular field covered by a given article, were deemed qualified to pass upon the subject matter, and to recommend approval or disapproval for publication. When the United States entered the World War this censorship was still effective:[2]

> Medical officers will not publish professional papers requiring reference to official records or to experience gained in the discharge of their official duties without the previous authority of the Surgeon General.

It now became applicable not only to the Regular Medical Corps, but to the Medical Reserve Corps. With the rapid expansion of the Medical Department which active participation in the war entailed, and with the entry upon active duty of the large number of doctors from civil life, many of whom were totally unfamiliar with military requirements, this censorship became a much more important and complicated matter than it had been at any other time during peace or war. For a number of months the work was conducted as formerly, under the direction of the Surgeon General, through his adjutant, the various papers submitted being forwarded for review to medical officers of the different divisions or sections of the Surgeon General's Office. The constantly increasing number of papers sent in for authority to publish made it necessary to place the censorship on a more formal and specialized basis. Accordingly, the Board of Publications was organized in April, 1918.[3]

A General Publicity Board (q. v.) was created by the same office order, its duty being to review and advise regarding the contemplated publication, in current lay journals, of all matters related to the Medical Department.

It was thus ordered that "no permission to distribute, print, or publish any book, interview, pamphlet, review, abstract, article, or monograph shall be given by any officer of the Medical Department without authorization from the Surgeon General conveyed through the respective boards."

The cooperation of editors of medical publications was invited by the following memorandum.[4]

> The large number of medical officers recently joining the Medical Department direct from civil life, and unfamiliar with the Army Regulations governing the publication of scientific papers, has resulted in a number of papers being published in various journals without authority from this office.
>
> Editors of medical publications are requested to cooperate with this office in impressing upon medical officers the necessity for compliance with the inclosed memorandum.
>
> It is requested that papers received from medical officers in this service which do not show that they have been referred to this office, and authority for publication granted by the Surgeon General, be forwarded direct to this office in order to obtain this authority.
>
> In authorizing the publication of a paper this office does not necessarily signify its accordance with views or opinions expressed therein. It is, therefore, requested that editors refrain from appending any note or legend expressing the formal authorization of this office.

Later the following memorandum was sent to medical editors:[5]

> Attention is directed to the fact that on March 27, 1918, your cooperation was solicited in a memorandum explaining the necessity for medical officers conforming with the regulation of securing authority from this office before publishing professional papers.
>
> Further attention is now called to that portion of the memorandum for division surgeons which makes it necessary to submit professional papers to this office in duplicate. Will you kindly aid this office by submitting two copies in every instance?

Instructions regarding the submitting of manuscripts to the Board of Publications were issued, through military channels, to medical officers in the following memorandum:[6]

> As stated in the circular memorandum for Editors of Medical Publications recently issued by the Surgeon General's Office, all medical manuscript by medical officers of the Army intended for publication should be first submitted to the Board of Publications, Surgeon General's Office, Washington, D. C., for censorship and approval. The authors are requested to send in two typewritten copies of their manuscripts to the Board of Publications, care being taken that the manuscripts are double spaced. Attention to this detail will facilitate handling of the manuscripts, both by censors and publishers.

ACTIVITIES.

When a paper was received by the Board of Publications with a request for authority to publish, a record was made thereof on two filing cards—one for the title, the other for the author. These cards gave the date of receipt; name of author; title of paper; the division of the Surgeon General's Office having jurisdiction over the particular subject involved, to which the paper was sent for review; report of the division and date thereof; final action (approved, disapproved, or suggestions as to revision, etc.), and date thereof; disposition of paper and duplicate.

When a paper was returned to the board, with the recommendation of the division or section to which it had been sent, the author was immediately notified of the action taken. If requested by the author, one copy of the paper, if approved, was forwarded to the journal in which publication was desired. The duplicate copy was filed under the author's name.[a] If only one copy was submitted, this was placed on file and the author was notified to send another copy (in the case of approved papers) to the journal in which he wished it published.

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[a] For purposes of expedition, and for the convenience of the Historical Division of the Surgeon General's Office, the Board of Publications was permitted to retain in the office of the board all correspondence, copies of papers, and other data concerned in the execution of its functions.

In some instances, as when the author was overseas or at a distant post, the manuscript was copied, or the journal to which it was sent was requested to send duplicate proof for filing. Each successive step in the procedure was recorded on the cards, so that information regarding the disposition of a paper was always available. All correspondence concerning the papers was kept on file in the office of the Board of Publications. In some instances, as in the case of a book dealing with the complete history of an overseas base hospital, a complete investigation dealing with disciplinary or other measures of a military rather than strictly medical character, the question of authority to publish was referred to The Adjutant General's Office, Publication Division.

From May 17, 1918, to February 1, 1920, 1,670 papers were acted upon in the manner outlined.[7]

OTHER LITERARY ACTIVITIES.

In addition to its routine work, the board prepared from its files complete bibliographies of the different subjects covered, supplying such bibliographies upon request to contributors to the Medical and Surgical History of the War.

GENERAL PUBLICITY BOARD.

In February, 1918, a Committee on Publicity was organized in the Surgeon General's Office[8] to review and pass upon all information which might be given out by the office for official publication. In April the General Publicity Board was created[9] to review and advise regarding the contemplated publication by members of the Medical, Dental, Veterinary, Sanitary, and Nurse Corps in lay journals of all matters relating to the Surgeon General's Office, to visé requests from the Committee on Public Information, from newspaper correspondents, magazine writers, and others for information deemed suitable for publication in the public press.

In November, 1918, the scope of the board was enlarged to include the establishment and supervision of newspapers at Army hospitals.[10] On December 5, 1918, the first of these papers, *The Come Back*, was published at Walter Reed Army General Hospital, Takoma Park, D. C. In February, 1919, the board became the Section of General Publicity, Surgeon General's Office, and its functions and relations to the physical reconstruction of disabled soldiers were described, in part, as follows:[11]

> (A) To coordinate and standardize, as far as feasible, existing hospital newspapers and further to establish other hospital newspapers wherever the morale and the educational needs of the hospital demand them. In this connection it should be stated that where feasible each hospital issuing a newspaper should have all of the facilities for the publication of the paper at the hospital.
>
> (B) To assist the Educational Department and other responsible officers of the hospital in the publication of the paper by helpful suggestions; by supplying news from this office which relates to the Medical Department; by furnishing photographs, cartoons, and other original illustrations or cuts, plates, or matrices; and by aiding in increasing the advertising patronage and the circulation of the newspaper in the hospital and to the public at large.
>
> (C) To cooperate with the Division of Physical Reconstruction by furnishing to the Educational Department of the hospital the services of expert newspaper men and printers as instructors of the patients who may be benefited mentally or manually by the training and education embraced in any branch of printing and the mechanical operations of newspaper work, as well as in reporting, advertising, circulating, editorial writing, illustrating, cartooning, and story writing.

(D) To furnish the daily press and the popular and scientific periodicals news items, photographs, and special articles descriptive of the curative work applied in the treatment of disabled soldiers, in the attempt to keep the public informed as to what is being done for the improvement and the cure of disabled soldiers in military hospitals, and other information from the Medical Department of general public interest.

1. It is the policy of the Section of General Publicity to serve the hospital and camp authorities in an advisory capacity. The desire is to encourage local enterprises by every possible assistance it can render. It will endeavor to place at the disposal of the local authorities the services and the advice of a body of experts in the news gathering, the making, the publication, and the circulation of an effective newspaper.

2. In order that the fullest cooperation in publicity may be obtained, you are directed to instruct the chief educational officer to send to the Division of Physical Reconstruction of this office such clippings, items, photographs, publications, posters, and special notices as will give a comprehensive idea of the work of physical reconstruction in your hospital. It is also desirable that reports should be made concerning results with individual patients and other interesting matter that will help the public to form a just estimate of the value of training, education, and play as curative measures should be reported.

3. For the information of the patients, their relatives, and friends, the hospital newspaper should contain some authoritative statements furnished by the Bureau of War Risk Insurance and by the Federal Board of Vocational Education, which embrace the benefits provided by the Government of compensable disabled soldiers and sailors after their discharge from the Army and Navy.

As the hospitals closed, the newspapers were suspended. Regulations of the Joint Committee on Printing of Congress dated September 19, 1919, authorized the Surgeon General to publish not more than seven publications at Army hospitals.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

BOARD OF PUBLICATIONS.

Lynch, Charles, Col., M. C., secretary.
McCulloch, Champe C., jr., Col., M. C., chairman.
Garrison, F. H., Lieut. Col., M. C., secretary.
Seelig, M. G., Lieut. Col., M. C., secretary.
Wood, Casey A., Lieut. Col., M. C., secretary.
McAfee, Loy, Contract Surg., secretary.
McKnight, Mary Pearson, Contract Surg., secretary.

ADVISORY BOARD.

Lyster, T. C., Brig. Gen., M. D.
Church, James R., Col., M. C
Longcope, Warfield T., Col., M. C.
Vaughan, Victor C., Col., M. C.
Welch, Wm. H., Col., M. C.

COMMITTEE ON PUBLICITY.

Bushnell, George E., Col., M. C.
Vaughan, Victor C., Col., M. C.
Harris, Seale, Lieut. Col., M. C.

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[a] In this list have been included the names of those at one time or another were members of the board during the period, April 6, 1917, to December 31, 1919.
The names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

GENERAL PUBLICITY BOARD.

Noble, R. E., Maj. Gen., M. D.
Munson, E. L., Brig. Gen., M. D.
Ashburn, Percy M., Col., M. C.
Parker, Walter R., Col., M. C.
Yoder, J. P., Capt., S. C. (also liaison officer with Chief of Staff, Morale Branch).

PUBLICITY DIVISION.

Cook, C. Fred, Maj., Infantry, chief.
Smith, W. W., Maj., S. C., chief.
Gregory, Joseph P., Capt., S. C., chief.
Pullman, E. H., Capt., S. C., chief.

Wynkoop, D. W., Maj., M. C.
Halloran, Edward R., Capt., Signal Corps.
Henry, M. C., Capt., M. C.
MacLeod, C. A., Capt., chaplain.
McKenney, J. L., Capt., Q. M. C.
Mearns, W. H., Capt., S. C.
Randall, J. F., Capt., A. S. A.
Alexander, Paul A., Lieut., A. S. A.
Boyd, Reuben E., First Lieut., chaplain.
Crudington, C. T., First Lieut., S. C.
Lamar, E. H., First Lieut., chaplain.
Palmer, Alfred C., First Lieut., F. A.
Patterson, K. M., First Lieut., Infantry.
Snider, James E., First Lieut., Cavalry.
Weisblath, W. B., First Lieut., Cavalry.
Wright, Robert C., First Lieut., Infantry.
Beamer, Gail H., Second Lieut., A. S.
Carson, Ivan D., Second Lieut., Infantry.
Garrett, Roger, jr., Second Lieut., S. C.
Lloyd, T. L., Second Lieut., A. S. A.
Matteson, B. V., Second Lieut., M. T. C.
Sanderson, Z. C., Second Lieut., S. C.

REFERENCES.

(1) Manual for the Medical Department, 1890, par. 176.
(2) Ibid., 1916, par. 423.
(3) Office order, No. 21, S. G. O., April 29, 1918.
(4) Memo., S. G. O., to editors of medical journals, March 27, 1918. Filed, Board of Publications, S. G. O.
(5) Memo., S. G. O., to editors of medical journals, May 22, 1918. Filed, Board of Publications, S. G. O.
(6) Memo., S. G. O., to medical officers (B–338). Filed, Board of Publications, S. G. O.
(7) Report of the activities of the Board of Publications, February 1, 1920. On file, Historical Division, S. G. O.
(8) Office order, No. 6, S. G. O., February 12, 1918, On file, Record Room, S. G. O. 024–2.
(9) Office order, No. 21, S. G. O., April 29, 1918. On file, Record Room, S. G. O., 000.7 (Board of Publicity).
(10) Memo. of conference with General Munson, chief of morale branch of the General Staff, November 15, 1918. On file, Record Room, S. G. O., 250–2 (Morale).
(11) Circular letter, No. 66, S. G. O., February 1, 1919. On file, Record Room, S. G. O., 024.2 (Administrative Division, S. G. O.).

CHAPTER XXV.

HISTORICAL DIVISION.

As originally created, the administrative organization charged with the duty of collecting and preparing material for a medical and surgical history of American participation in the World War was known as the Historical Board.[1] With the reorganization of the Surgeon General's Office in 1918, it became the Historical Section of the Library Division,[2] and finally the Historical Division.[3]

During the early months of our participation in the conflict the work of the Historical Board consisted largely of correspondence and conferences, the collection and cataloguing of literature (interim reports), reports, and other official documents from base and general hospitals in the United States, and from the Chief Surgeon's Office, and hospital centers, American Expeditionary Forces. The many reports and protocols made by medical observers at the front before our entry into the war were likewise collected from the Council of National Defense and the Record Room of the Surgeon General's Office, and a special catalogue thereof was made.

Medical officers in the field, particularly in the American camps, were early informed[4] as to the duty of collecting material for the history, and it was soon ascertained that plans had been laid independently to carry out a similar program on the Western Front. Mimeographed questionnaires[5] were sent out to camps and base and general hospitals in home territory, with a view to collecting separate medical histories of these establishments. Medical officers in the field were urged to keep notebooks concerning important matters of personal observation, if responsible for medical and surgical records at the front or at a hospital, to submit war diaries, to see that such records were made as complete and accurate as possible, and to take every precaution against loss of records, whether in the possession of the medical officer or being transmitted.[6] Medical officers were urged to keep this historical purpose in mind throughout the war; to contribute official and private writings having historical interest or value; to collect printed matter, pictures, specimens, models, and other significant objects, and materials secured by exchange or otherwise from representatives of other Governments. The Historical Division was the authorized custodian of all such historical medical data. Commanding officers of base hospitals were authorized to make subject indices of medical and surgical cases and to make and transmit histories of epidemics or of unusual cases.

Arrangements were made for the safe custody and transportation of historical material accumulated on the Western Front and in Italy.[7]

Through the courtesy of The Adjutant General's Office and the Provost Marshal General's Office the medical records of recruitment and mobilization were placed at the command of the Surgeon General for the purposes of the history.[8] It was arranged with The Adjutant General's Office that records be permitted to be taken to the Medical Record Division of the Surgeon General's Office in order that the statistical material needed for the history might be made available for this purpose. Arrangements were made likewise with the Provost Marshal General's Office whereby a copy of the physical examination for each man placed in class 5 as permanently disqualified for military service was sent through the adjutant general of the State to the Surgeon General's Office for filing.[9] It thus became possible to obtain from The Adjutant General and the Provost Marshal General a complete medical military census of the men of draft age in this country.

A medical officer [10] visited most of the Army camps in the Southern and Middle Western States during May and June, 1918, in an effort to stimulate interest in the production of historical records and for the purpose of personally collecting as much historical data as possible. One of the executive officers was ordered overseas [11] to confer with the chief surgeon, American Expeditionary Forces, and with other officers of our own Medical Department, with regard to the collection of historical material and with the French and British officers for the purpose of profiting by their longer experience in this war.

From the start a careful check was kept of the compilation of the administrative histories of the separate divisions of the Surgeon General's Office for use in administrative history of the Medical Department in the United States (the present volume). Continuity in all these records was maintained by means of annual reports from the administrative divisions and supplemental war diaries from the camps and base hospitals.

Meanwhile the curator of the Army Medical Museum cooperated with the Historical Board in the collection of pathological specimens, with attached protocols and clinical histories, and in the production of graphic material for illustrating the work as required.

Through the Hospital Division the commanding officers of base hospitals were directed to prepare indices of medical and surgical cases to be used as a key or guide to these records after they have passed into the hands of the Adjutant General of the Army.[12] Every effort was made to stimulate the production of clinical material in medicine and surgery from the base hospitals, and since no funds existed at that time for having such material printed by the Public Printer, these contributions were published in the various medical journals, through the Board of Publications (q. v.), which kept on file manuscripts or reprint copies of each for use, as needed, in the compilation of the history.

On July 2, 1918, an advisory council was appointed to act in conjunction with the Historical Board. The personnel of this body changed from time to time, until finally, with the demobilization which followed the armistice, the council ceased to function.

With the reorganization of the Surgeon General's Office in the autumn of 1918 (see Chart XXIV), the Historical Board became the Historical Section of the Library Division,[2] the librarian, by virtue of his office, being executive officer of the section.

Shortly after the signing of the armistice a tentative program for the composition of the several volumes of the history was drawn up through conference of the officers of the Historical Section with the Surgeon General and his administrative chiefs. Officers were then assigned as authors or editors of the different volumes, parts, or sections, and, through correspondence with these prospective contributors, it was possible to collect a large amount of material to be drawn from as required in the compilation of the history.

On January 8, 1919, an Editorial Board[13] was appointed by the Surgeon General to pass upon the several volumes as presented for publication, subject to approval by the Historical Section of the War Plans Division of the General Staff, now the Historical Section, the Army War College.[14]

On December 4, 1919, the Historical Section was reorganized, becoming a separate entity, the Historical Division of the Surgeon General's Office.[3]

In June, 1920, an appropriation was obtained from Congress for the preparation, printing, and binding of the history. The item covering this expenditure applies to the Surgeon General's Office, and appears in the sundry civil bill providing for the year ending June 30, 1921. It reads as follows:

> Medical and Surgical History of the War with Germany; toward the preparation for publication, under direction of the Secretary of War, of the Medical and Surgical History of the War with Germany, including printing and binding, at the Govermnent Printing Office, and the necessary engravings and illustrations, $50,000: *Provided*, That the cost of such history shall not exceed $150,000.

Another appropriation of $50,000 was added the next year.

PERSONNEL.[a]

(April, 1917, to December, 1919.)

HISTORICAL BOARD.

McCulloch, Champe C., jr., Col., M. C.
Fulton, John S., Lieut. Col., M. C.
Garrison, Fielding H., Lieut. Col., M. C.

ADVISORY BOARD.

Vaughan, Victor C., Col., M. C.
Welch, William H., Col., M. C.
Wood, Casey A., Lieut. Col., M. C.

HISTORICAL DIVISION.

Winter, F. A., Brig. Gen., M. D., chief.
Lynch, Charles, Col., M. C., chief.
Straub, Paul F., Col., M. C., chief.

Duncan, Louis C., Col., M. C.
Steiner, Frank, Capt., S. C.
McAfee, Loy, Contract Surg.
McKnight, Mary Pearson, Contract Surg.
Morgan, Audrey, Contract Surg.

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[a] In this list have been included the names of those who at one time or another were assigned to the division during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—the chiefs of the division and the assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

REFERENCES.

(1) S. O., W. D., No. 196, pars. 217 and 218, August 23, 1917. On file, Historical Division, S. G. O.

(2) Office order, No. 97, S. G. O., November 30, 1918. On file, Historical Division, S. G. O.

(3) Office order, No. 1151, S. G. O., December 4, 1919. On file, Historical Division, S. G. O.

(4) Circular letter, S. G. O. to medical officers in base and general hospitals (not dated). Subject: Medical and Surgical History of the War. On file, Historical Division, S. G. O.

(5) Questionaires to camps and hospitals. Copies on file, Historical Division, S. G. O.

(6) Memo., S. G. O., for camp and division surgeons and commanding officers of base hospitals, June 24, 1918. On file, Historical Division, S. G. O.

(7) Letter from the Surgeon General to the chief surgeon, A. E. F., France, January 24, 1919. Subject: Annual Report of the Surgeon General. On file, Record Room, S. G. O., 319.1–2 (A. E. F. France) (Y). Letter from the chief surgeon, May 16, 1919. Subject: Material for Annual Report, the same to be turned over for use in the Medical and Surgical History of the War. On file, Record Room, S. G. O., 314.7 (Medical History, A. E. F., France) (Y). Letter from the chief surgeon, A. E. F., France, to the Surgeon General, June 3, 1919. Subject: Material for Annual Report of the Surgeon General, the same to be forwarded to Historical Division for use in compiling Medical and Surgical History of the War. On file, Record Room, S. G. O., 319.1–2 (A. E. F., France) (Y).

(8) Memo. for The Adjutant General of the Army from the Provost Marshal General, the Surgeon General of the Army, and the Surgeon General of the Public Health Service, January 9, 1918. Subject: Tabulation of Records of Men Rejected for Physical Defects; and first indorsement thereto, from The Adjutant General to the Surgeon General, dated January 28, 1918. Subject: Authorizing the taking of records from The A. G. O. On file, Record Room, S. G. O., 413.5 (Tabulating Machines).

(9) Letter from the office of the Provost Marshal General to draft executives of all States, August 23, 1918. Subject: Form 1010 for Unconditionally Rejected Registrants. On file, Record Room, S. G. O., Correspondence File, 315.–1.

(10) Orders No. 20672, Special detail of Maj. Fielding H. Garrison, M. C. On file, A. G. O., 201 (Files). Garrison, Fielding, Maj., M. R. C.

(11) Confidential orders No. 162, par. 33, July 12, 1918, detailing Col. C. C. McCulloch, jr., M. C., to special duty overseas. On file, Commissioned Personnel Division, S. G. O.

(12) Circular letter from the Surgeon General, June 25, 1918. On file, Historical Division, S. G. O.

(13) Correspondence on file, Historical Division, S. G. O.

(14) Letter from The Adjutant General of the Army to the chiefs of all staff bureaus, and Chief, Historical Branch, War Plans Division, April 5, 1920. Subject: Unification of Historical Publications. On file, Historical Division, S. G. O.

CHAPTER XXVI.

THE ATTENDING SURGEON'S OFFICE, WASHINGTON, D. C.

The attending surgeon's office in Washington, D. C., was not properly a part of the Surgeon General's Office during the World War in the sense that were the other divisions which are discussed in this history. For many years before the World War, as well as during the time it was in progress, officially the attending surgeon's office was directly under the War Department and not directly under the Surgeon General's Office. Yet, during the war, in point of fact, a direct relationship was maintained between the Surgeon General's Office and that of the attending surgeon, and the latter was actually shown in organization charts of the Surgeon General's Office made at the time. (See Chart XXIII.) This being the case, the attending surgeon's office is discussed here.

At the time of our entry into the World War the Washington attending surgeon's office, a part of which was an Army dispensary, was located at 1106 Connecticut Avenue, occupying portions of the second and third floors of the building. The function of the attending surgeon was to supply medical care for the active officers and enlisted men of the Army in Washington, and for their families as well, and also for retired officers and enlisted men residing there.[1] The three medical officers on duty in this office were almost swamped with work as soon as war was declared. A great increase in the numbers of officers and enlisted men in Washington occurred and the families of many Regular officers flocked there when these officers were ordered abroad. This put an added strain on the already overworked doctors. Expansion was started. In July, 1917, more medical officers were secured and the entire second and third floors of the building in which the office was located were leased.

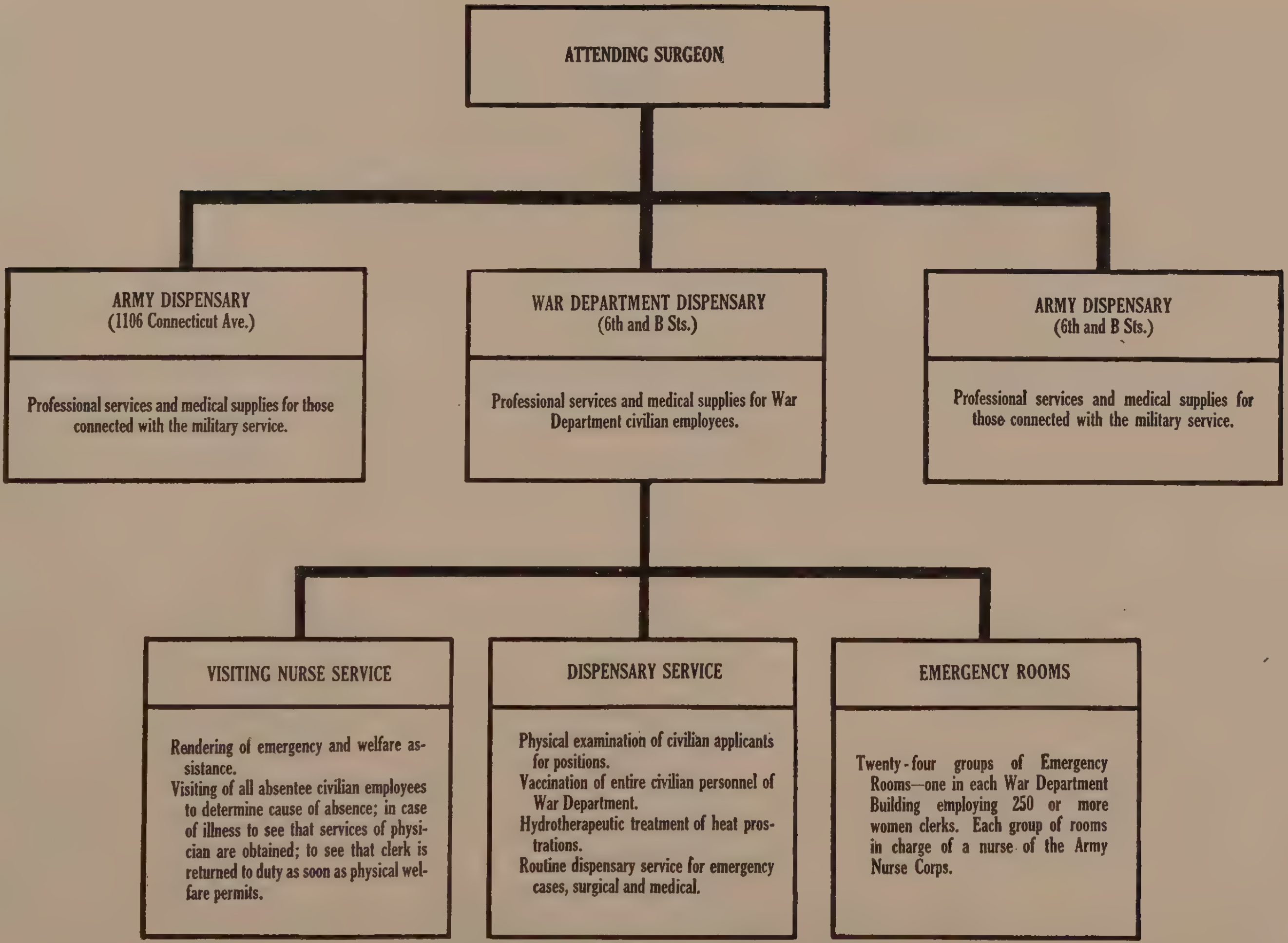
Finally, the influx to Washington of officers, enlisted men, and civilian clerks for whom the Army now furnished emergency treatment was so great, while at the same time the local doctors were much lessened in numbers, as many went into the military service, that a rather serious condition of affairs resulted which required immediate relief. Pertinent recommendations to this end were made, therefore, by the Surgeon General, and acted upon favorably, as indicated in the following correspondence:[2]

March 4, 1918.

From: The Surgeon General of the Army.
To: The Secretary of War.
Subject: Dispensary and emergency station.

1. Authority is requested to establish a War Department dispensary and emergency station at Unit C, Henry Park Building, Sixth and B Streets NW., for the purpose of meeting the unusual and urgent demands for dispensary service for officers and their families, and emergency work for civilian employees. This request is in compliance with the request of the Secretary of War.

(Signed) W. C. Gorgas,
Surgeon General, United States Army.



ATTENDING SURGEON

ARMY DISPENSARY
(1106 Connecticut Ave.)

Professional services and medical supplies for those connected with the military service.

WAR DEPARTMENT DISPENSARY
(6th and B Sts.)

Professional services and medical supplies for War Department civilian employees.

ARMY DISPENSARY
(6th and B Sts.)

Professional services and medical supplies for those connected with the military service.

VISITING NURSE SERVICE

Rendering of emergency and welfare assistance.
Visiting of all absentee civilian employees to determine cause of absence; in case of illness to see that services of physician are obtained; to see that clerk is returned to duty as soon as physical welfare permits.

DISPENSARY SERVICE

Physical examination of civilian applicants for positions.
Vaccination of entire civilian personnel of War Department.
Hydrotherapeutic treatment of heat prostrations.
Routine dispensary service for emergency cases, surgical and medical.

EMERGENCY ROOMS

Twenty-four groups of Emergency Rooms—one in each War Department Building employing 250 or more women clerks. Each group of rooms in charge of a nurse of the Army Nurse Corps.

CHART XXIII.—Attending Surgeon's Office, June, 1918.

[1st ind.]

WAR DEPARTMENT, *March 6, 1918.*

Approved.

(Signed) B. CROWELL,
Acting Secretary of War.

MARCH 5, 1918.

From: The Surgeon General.
To: The Secretary of War.
Subject: Additional dispensary and emergency station.

1. In connection with a suggestion for the establishment and conduct of an additional (temporary) dispensary and emergency station in the Henry Park Building at Sixth and B Streets NW., at which it would be possible to afford emergency treatment to the civilian employees of the War Department, and dispensary service for officers (and their families) connected with bureaus located in this section of the city, this office will recommend to The Adjutant General the issuance of the necessary orders assigning a sufficient number of medical officers, nurses (to include visiting nurse service), and enlisted men to such a dispensary as soon as it may be established.

2. Such medical supplies and equipment as may be necessary in the dispensary and medical supplies for the emergency station and rest rooms will be issued by the Medical Department as to other dispensaries maintained by it.

3. It is understood that the Medical Department personnel, including medical officers, nurses, and enlisted men, will remain under the supervision of the Surgeon General and that he will be responsible for their selection.

4. This office is prepared to recommend the issuance of the necessary orders upon receipt of your approval of the establishment of the dispensary and rest station and the assignment of the space necessary.

For the Surgeon General:

(Signed) C. L. FURBUSH,
Lieutenant Colonel, Medical Corps, National Army.

[1st ind.]

WAR DEPARTMENT, *March 6, 1918.*

The foregoing plan as outlined by the Surgeon General is approved, attention being invited to the approval of the establishment of an additional dispensary and emergency station as indicated on a separate paper herewith.

The Surgeon General is requested to confer with Mr. G. H. Dorr, room 242, Secretary's Office, War Department Building, as to the amount of space which will be required.

(Signed) B. CROWELL,
Acting Secretary of War.

REGULATIONS GOVERNING THE OPERATION OF DISPENSARY, EMERGENCY, AND REST ROOMS IN BUILDINGS OF THE WAR DEPARTMENT, WASHINGTON.

I. Dispensary has been established at Sixth and B Streets, Unit C, with emergency rooms or rest rooms in other War Department buildings, all under the exclusive jurisdiction of the Surgeon General of the Army in so far as medical administration and care of sick and emergency cases are concerned.

II. Civilian employees of the department may secure emergency treatment at the dispensary and emergency rooms and such assistance as it may be possible to provide at rest rooms.

III. A visiting nurse service has been organized and it is directed that the names and addresses of all employees reporting sick or who are absent and unaccounted for be reported promptly to the emergency dispensary, Sixth and B Streets, each day in conformity to the schedule arranged by the Surgeon General. The importance and necessity of this to the department and the full cooperation of all bureaus and offices is essential to secure the results desired.

IV. It should be understood that the facilities available are intended only for emergency cases, and that with respect to chronic cases of illness the medical officers will limit their assistance to advice that a civilian physician be consulted by the employees.

Approved:

(Signed) N. D. BAKER,
Secretary of War.

APRIL 20, 1918.

The conditions necessitating this expansion were described in the following report:[3]

> Without any additional provision in the way of housing, without any addition in the way of hospital facilities, and with the usual number of doctors and nurses greatly reduced to meet the needs of the Army and Navy between the date of the declaration of war by the United States and the 1st of January, 1918, Washington as a city was called upon to adjust itself to the enormous burden of housing, feeding, and otherwise caring for an addition to its population of nearly 100,000 people. The urgent cry of the War Department for clerical help in its various branches resulted in a never-ending stream of thousands of willing workers, mostly girls, pouring into the city, a large percentage of whom were experiencing for the first time the difficulties of establishing themselves in a strange town away from friends and relatives.
>
> In spite of the enormous numbers coming to Washington, it began to be noticed that those coming to work soon lost their enthusiasm, gave up their work, and returned to their homes. The short period of service assumed the aspect of a very serious and expensive problem In some divisions the "labor turnover" amounted to as much as 15 to 20 per cent per month.
>
> * * * * * * *
>
> A tremendous effort was made to increase and improve living facilities, particularly for the girls coming to Washington.
>
> The next big problem was to meet the need for medical service. The knowledge that in a great number of cases girls left the work here in a panic over inability to get medical service made it seem necessary to devise a system of medical service which could be easily and promptly reached in case of an emergency. In April, 1918, on order of the Secretary of War, a dispensary system was established for emergency service for civilian employees of the War Department. This work was organized by the Surgeon General of the Army and placed under the immediate supervision of the attending surgeon. The system consisted of four divisions, viz:
>
> 1. A central dispensary, equipped for all sorts of emergency care and manned by medical officers, contract surgeons (women), and trained nurses.
> 2. "Emergency rooms," one in each building occupied by the War Department. Each room in charge of a trained nurse.
> 3. A group of visiting nurses.
> 4. Volunteer health committees in each bureau of the War Department.
>
> The general plan of operation provided that any employee who felt ill while at work would report to the nurse in charge of the nearest emergency room. The great majority of all complaints could thus be relieved at once and the employee immediately be enabled to return to duty. More serious cases were held and a doctor called from the central dispensary or the patient sent or taken direct to the dispensary. The great majority of all cases coming to the dispensary were not of a serious nature and were treated and at once returned to duty or at most relieved by a day or two of rest in bed at home. Those cases of a more serious nature were seen in their homes by visiting nurses and doctors from the dispensary, if the patients were unable to get their own physicians. By cooperation with the various city hospitals, patients requiring hospital care were admitted and attended by the dispensary staff.
>
> Before the war there was a lack of hospital beds in Washington to meet the ordinary needs of the city. It was early recognized by the attending surgeon that even in a mild epidemic there would be many more hospital beds needed than would be available. Plans were under way by the Housing Corporation and also by the attending surgeon to provide additional hospital beds, but the arrival of the influenza epidemic made it necessary to institute emergency measures. This emergency was met by the establishment of emergency hospitals by the Public Health Service. A recurrence of the epidemic has made it necessary to establish another hospital. This is now (December, 1918) being conducted under the cooperation of the Public Health, the District Health Office, the Red Cross, and the attending surgeon. The present arrangement can of necessity be only an emergency and temporary arrangement. Washington still needs from 500 to 1,000 additional hospital beds, and the health hazard here can only adequately be met when the District has made such provision.
>
> Those who were taken ill while at home were visited by a "visiting" nurse, who rendered nursing care and arranged for such other service that might be necessary.
>
> A steady growth in the various bureaus of the War Department made it necessary to increase from time to time the number of emergency rooms, the number of dispensaries, and the number of

nurses and doctors. The maximum number of emergency rooms was 22, the maximum number of dispensaries 3; the maximum staff consisted of 18 doctors (8 medical officers, 10 women contract surgeons) and 45 nurses.

The number of people cared for by the dispensary through its various divisions rapidly increased from the time of its organization in April till in July there was an average of over 500 cases per day. This number continued to increase and reached its maximum in October, when the average for the entire month was over 1,000 patients per day. This number decreased in November to about 800 patients per day; in December there was a still further decrease to about 700 per day.

In spite of the increase of equipment and staff it became increasingly evident that the need for this service was much greater than could be furnished. The various rooms became much congested and the staff became exhausted from overwork. Volunteer helpers were solicited and were found to be of great assistance in caring for the cases of minor illness and as nurses' aids in attending the sick. The lack of trained workers became more and more acute every day and it was seen that the only source of relief would be through partially trained volunteers. With the approval of the Surgeon General, the attending surgeon submitted to the Secretary of War a plan for the organization and training of volunteer health committees. This plan was approved October 31, 1918. Since then these committees have been organized in all the larger War Department bureaus and have been a great help to the dispensary in satisfactorily meeting the requests for service.

It has been shown here, just as in many industrial establishments, that the service of the dispensary and its staff has made it possible for thousands of clerks to continue at their work when but for this service they would be at home, and it is safe to say that the encouraging word of a nurse or doctor has been the means of preventing hundreds of girls from becoming discouraged and deserting jobs where they were badly needed.

The war over, conditions changed rapidly. Doctors who left Washington to go into Government service soon got back to their old obligations as civilian practitioners. Conditions soon became such that civilian employees could get adequate service without assistance from the attending surgeon.

The maintenance of emergency rooms, however, has been recognized for some time by all business efficiency experts as a necessity in all offices, stores, and other industrial establishments. Hundreds of cases of half-day absences can be prevented in a year by a few minutes' attention of a competent trained nurse.

When the armistice was signed, November 11, 1918, the attending surgeon's office consisted of the main dispensary, 1106 Connecticut Avenue (this having been increased to include one section of the ground floor in addition to second and third floors); subdispensary No. 1, at Sixth and B Streets NW.; subdispensary No. 2, at State, War, and Navy Building; subdispensary No. 3, in the Munitions Building; and 22 emergency or rest rooms in various War Department buildings, each in charge of a trained nurse and six supervising and visiting nurses.[4]

Following a recommendation to the Surgeon General by the attending surgeon, a dental department was opened in the main dispensary on July 20, 1917, and was gradually increased to eight chairs, with a complete dental laboratory.[5] In August, 1918, enlisted dental assistants were released for field service and trained women dental hygienists were installed.[6] Likewise, in the other departments men were released and women appointed to such positions as they could fill. When the emergency treatment of civilian employees was authorized, women physicians were employed as contract surgeons [7] and assigned to the dispensaries where the young women employees might consult them.

During the influenza epidemic, when the civil and military hospitals of Washington were filled to their maximum capacity, a Public Health Service hospital was opened on Virginia Avenue in a temporary building, under the supervision of the attending surgeon. This afforded hospitalization for a large number of war workers.[4] Later a building at 612 F Street NW., converted into a hospital for influenza patients, was controlled jointly by the attending surgeon, the city health department, the United States Public Health Service, and the American Red Cross. The attending surgeon established an office in the building, through which he supplied the nursing, enlisted, and medical personnel for the hospital.[4]

The city was divided into six districts, to each of which a visiting physician was assigned.

Up to the time of the signing of the armistice all departments in the attending surgeon's office were being actively expanded; but with the beginning of the year 1919, the coincident cessation of influenza and the diminution of commissioned and enlisted personnel in Washington, a reduction was demanded.[8] The personnel in the four dispensaries and 22 emergency rooms then in operation was 35 medical officers, 9 women contract surgeons, 8 dental surgeons, 5 Sanitary Corps officers, 2 laboratory technicians (women), 61 nurses, 33 civilian employees, 32 enlisted men (including 4 men borrowed from Walter Reed General Hospital for use in the influenza hospital), making a total of 185 persons attached to the attending surgeon's office in its various departments. February 12, 1919, that part of the influenza hospital, 612 F Street, assigned to the attending surgeon was released and its Army personnel withdrawn. On May 9, 1919, 4 dispensaries and 11 emergency rooms were in operation with a personnel of 15 medical officers, 6 contract surgeons (women), 8 dental surgeons, 1 Sanitary Corps officer, 1 laboratory technician, 44 nurses, 15 enlisted men, 26 civilian employees, showing a reduction of 95. The personnel was further reduced as soon as authorization was received to close all subdispensaries.[8] Later the main office of the attending surgeon was organized on the group unit plan, with a Chief of Medical Service, Chief of Surgical Service, Chief of Ear, Nose, and Throat Department, Chief of Eye Department, Chief of Dental Department, and a Chief of Laboratory Division. X-ray and Obstetrical Departments which had been previously maintained were abolished as departments and placed under the Medical Service.

Record keeping was standardized, a central filing system for patients' records was installed, a medical secretary was employed, and clinical histories were ordered kept in all cases. Minor cases requiring little study were simply noted with the diagnosis and treatment outlined.

A complete X-ray plant, with the bedside machine, was installed at the dispensary. This was found adequate for all except intestinal cases, which were sent to the Army Medical School.

After the war the emergency treatment rooms for War Department employees were still maintained in charge of nurses, but the subdispensaries were closed, as employees no longer had difficulty in securing civilian medical attention.

From May 1, 1918, to April 30, 1919, there were treated in the emergency rooms and subdispensaries 254,069 war workers, in addition to the officers and enlisted men and their families in the District of Columbia, amounting to many thousands more.[9]

PERSONNEL.[a]

(April, 1917, to December, 1919.)

Lyster, Theodore C., Brig. Gen., M. D., attending surgeon.
Metcalfe, Raymond F., Col., M. C., attending surgeon.

Beeuwkes, Henry, Col., M. C.
Bernheim, Julien R., Col., M. C.
Carpenter, Alden, Col., D. C.
McAfee, Larry B., Col., M. C.
Dear, William R., Lieut. Col., M. C.
Doane, Philip S., Lieut. Col., M. C.
Harris, Seale, Lieut. Col., M. C.
Rice, William S., Lieut. Col., D. C.
Skinner, John O., Lieut. Col., M. C.
Bannister, Guy P., Maj., D. C.
Bowers, Daniel T., Maj., D. C.
Britton, James A., Maj., M. C.
Clay, Calvin E., Maj., M. C.
Cornell, Donald D., Maj., D. C.
Darnall, Moses H., Maj., M. C.
Davis, William T., Maj., M. C.
Deiber, Harry M., Maj., D. C.
Erving, William G., Maj., M. C.
France, Gerald D., Maj., M. C.
Frazier, Max C., Maj., D. C.
Henshaw, Frederic R., Maj., D. C.
Holmes, Claude D., Maj., M. C.
Hyde, Charles W., Maj., M. C.
Krupp, Peter C., Maj., D. C.
Lewis, Charles H., Maj., M. C.
Lyon, James A., Maj., M. C.
Mitchell, Leonard G., Maj., D. C.
Morris, Bascom F., Maj., M. C.
Neill, Thomas E., Maj., M. C.
Newcomb, John R., Maj., M. C.
Parker, Henry P., Maj., M. C.
Patten, William F., Maj., M. C.
Quickel, Herbert L., Maj., M. C.
Richardson, Walter H., Maj., D. C.
Skelton, Oscar G., Maj., D. C.
Strong, Robert A., Maj., M. C.
Sullivan, R. Y., Maj., M. C.
Thomas, Philip M., Maj., M. C.
Tobias, Henry W., Maj., M. C.

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[a] In this list have been included the names of those who at one time or another were assigned to the attending surgeon's office during the period, April 6, 1917, to December 31, 1919.

There are two primary groups—attending surgeons and assistants. In each group names have been arranged alphabetically, by grades, irrespective of chronological sequence of service.

Wells, W. A., Maj., M. C.
White, William C., Maj., M. C.
Willson, Prentiss, Maj., M. C.
Wright, Frederick T., Maj., M. C.
Alley, Richard M., Capt., S. C.
Carothers, Herbert C., Capt., M. C.
Chandlee, William H., Capt., M. C.
Christman, Paul W., Capt., M. C.
Clark, Orton H., Capt., M. C.
Dameron, Ernest P., Capt., D. C.
Dawson, John H., Capt., S. C.
Deming, William C., Capt., M. C.
Doyle, George F., Capt., M. C.
Ellis, George R., Capt., D. C.
Faulkner, Ralph L., Capt., D. C.
Goodell, William, Capt., M. C.
Garnett, Alexander Y. P., Capt., M. C.
Goodwin, Thomas G., Capt., S. C.
Hoblitzell, William H., Capt., D. C.
Houck, Alfred T., Capt., S. C.
Hughes, Lawrence J., Capt., M. C.
Hughes, Lee W., Capt., M. C.
Johnson, Stuart C., Capt., M. C.
Kennebeck, George R., Capt., D. C.
Kilgore, Harry L., Capt., M. C.
Keogh, John V., Capt., M. C.
MacLay, Otis H., Capt., M. C.
Marriott, Charles W., Capt., D. C.
Martell, Leon A., Capt., M. C.
Musgrave, Charles A., Capt., D. C.
Parkhurst, Guy McM., Capt., M. C.
Potter, Ward E., Capt., M. C.
Pruett, Harry J., Capt., M. C.
Robinson, Daniel W., Capt., S. C.
Rogers, Clarke, Capt., M. C.
Ruggles, Everett H., Capt., D. C.
Sawyer, Harold P., Capt., M. C.
Sibley, George J., Capt., D. C
Smith, George C., Capt., M. C.
Spoon, Thomas L., Capt., D. C.
Stewart, Harry E., Capt., M. C.
Tyler, Benjamin F., Capt., S. C.
Williams, Herbert L., Capt., M. C.
Zeidler, John C., Capt., D. C.
Arnold, Alphonse A., First Lieut., D. C.
Bailey, Alfred S., First Lieut., M. C.

Blair, Mortimer W., First Lieut., M. C.
Blanco, Pio, First Lieut., M. C.
Camp, Walter E., First Lieut., M. C.
Corey, Charles W., First Lieut., M. C.
Creighton, William J., First Lieut., M. C.
Dawson, Drexel L., First Lieut., M. C.
Donoho, Fitz W., First Lieut., S. C.
Emmert, Carl S., First Lieut., D. C.
Foster, Edward E., First Lieut., D. C.
Hare, Earl H., First Lieut., M. C.
Hollis, William A., First Lieut., M. C.
Johann, Albert E., First Lieut., M. C.
Larkin, Bernard, J., First Lieut., M. C.
Leibell, Casimir F. X., First Lieut., M. C.
Long, Frank H., First Lieut., M. C.
Lormor, Earl H., First Lieut., M. C.
McGrath, James H., First Lieut., D. C.
Mattes, Abraham, First Lieut., M. C.
Reisenberg, Max, First Lieut., S. C.
Ryder, Ollie A., First Lieut., M. C.
Sargent, Arthur F., First Lieut., M. C.
Scherer, Walter H., First Lieut., D. C.
Smith, Malcolm K., First Lieut., M. C.
Snodgrass, Frank B., First Lieut., M. C.
Thornburg, Harvey D., First Lieut., M. C.
Walters, Roy W., First Lieut., D. C.
Wieck, William F., First Lieut., D. C.
Mills, Joseph P., Second Lieut., S. C.
Romeo, Robert R., Second Lieut., S. C.
Snodgrass, Harry C., Second Lieut., S. C.
Baker, Lucy H., Contract Surg.
Cleverdon, Ella, Contract Surg.
Dassell, Margaret M. N., Contract Surg.
Donohue, Julia M., Contract Surg.
Johnstone, Mary M. S., Contract Surg.
Karpeles, Kate B., Contract Surg.
Kratz, Esther C., Contract Surg.
McKnight, Mary Pearson, Contract Surg.
Maher, Loretta K., Contract Surg.
Scott, Jessie T., Contract Surg.
Smith, Olive E., Contract Surg.
Stephenson, Nellis W., Contract Surg.
Walker, Marie W., Contract Surg.
Wilson, Sylvia McQ., Contract Surg.

REFERENCES.

(1) United States Army Regulations, 1913, corrected to April 15, 1917, par. 1473. Manual for the Medical Department, 1916, par. 375–6.

(2) Correspondence between the Secretary of War and the Surgeon General. On file, Record Room, S. G. O., Correspondence File, 230.61.

(3) Report of Maj. James A. Britton, 1918. On file, Record Room, S. G. O., 230.61 (Washington, D. C.).

(4) Annual report, War Emergency Dispensary Branch, Attending Surgeon's Office, Washington, D. C., year ending December 31, 1918. On file, Record Room, S. G. O., 230.61 (Washington, D. C.) (F).

(5) Correspondence. Subject: Personnel. On file, Record Room, S. G. O., Correspondence File 142079 (Old Files).

(6) Correspondence. Subject: Dental Hygienists. On file, Record Room, S. G. O., 231 (Hygienists, Dental).

(7) Correspondence. Subject: Contract Surgeons (female). On file, Record Room, S. G. O., 211 (Women Physicians).

(8) Letter from Attending Surgeon to the Surgeon General, May 31, 1919. Subject: Discontinuing Subdispensaries and Emergency Rest Rooms. Second indorsement, W. D., A. G. O., June 11, 1919, approved to take effect June 30, 1919. On file, Record Room, S. G. O., 230.61 (Washington, D. C.) (F).

(9) Summary of work done by months, from May, 1918, to February, 1919. On file, Record Room, S. G. O., 230.61 (Washington, D. C.) (F).

CHAPTER XXVII.

REORGANIZATION AND DEMOBILIZATION.

With the signing of the armistice the Secretary of War issued the order for the demobilization of a large part of the Military Establishment. In accordance with this program the Surgeon General effected a reorganization of his office in December, 1918, reducing the number of administrative divisions and sections from 32 to 11, as shown in Chart XXIV. The subsections of the Division of Surgery, and the Divisions of Military Orthopedics, Head Surgery, including Neurosurgery, Urology, and Roentgenology, were all brought under the Division of Surgery; the Division of Training Camps was placed under the Division of Sanitation; the Section of Epidemiology of the Division of Infectious Diseases and Laboratories and the Army Medical Museum were placed under the Laboratory Division. The Air Service Division was discontinued on March 14, 1919, and the Division of Physical Reconstruction on June 30, 1919. On August 23, 1919, in view of the increasing work connected with the Medical and Surgical History of the War, this was given an independent status as the Historical Division. The Surgeon General's Office, like all other War Department agencies, thus merged toward the rehabilitation of its pre-war status, further changes being made as the exigencies of the return to peace conditions demanded.

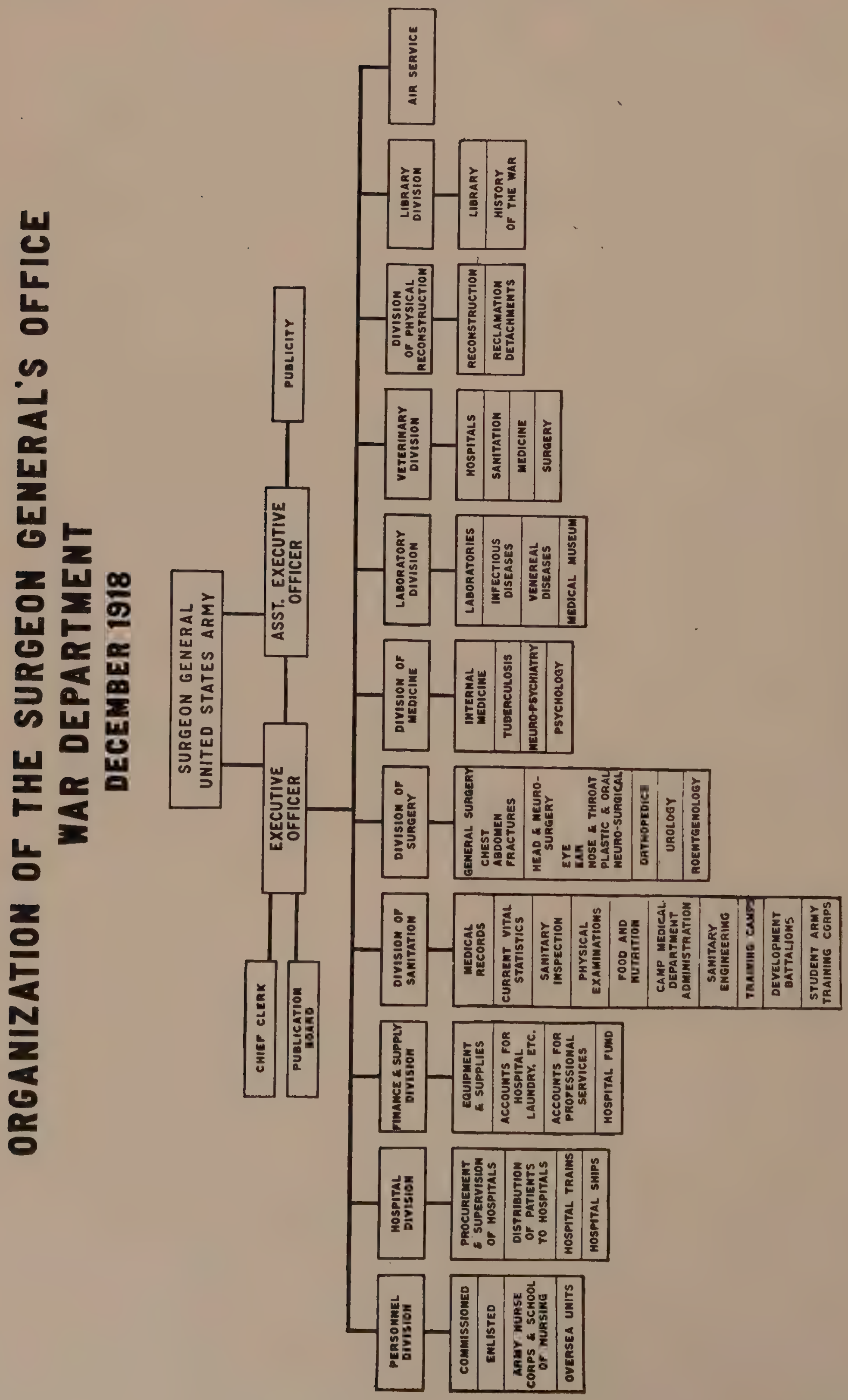
ORGANIZATION OF THE SURGEON GENERAL'S OFFICE
WAR DEPARTMENT
DECEMBER 1918
SURGEON GENERAL UNITED STATES ARMY
EXECUTIVE OFFICER
ASST. EXECUTIVE OFFICER
PUBLICITY
CHIEF CLERK
PUBLICATION BOARD
PERSONNEL DIVISION
COMMISSIONED
ENLISTED
ARMY NURSE CORPS & SCHOOL OF NURSING
OVERSEA UNITS
HOSPITAL DIVISION
PROCUREMENT & SUPERVISION OF HOSPITALS
DISTRIBUTION OF PATIENTS TO HOSPITALS
HOSPITAL TRAINS
HOSPITAL SHIPS
FINANCE & SUPPLY DIVISION
EQUIPMENT & SUPPLIES
ACCOUNTS FOR HOSPITAL LAUNDRY, ETC.
ACCOUNTS FOR PROFESSIONAL SERVICES
HOSPITAL FUND
DIVISION OF SANITATION
MEDICAL RECORDS
CURRENT VITAL STATISTICS
SANITARY INSPECTION
PHYSICAL EXAMINATIONS
FOOD AND NUTRITION
CAMP MEDICAL DEPARTMENT ADMINISTRATION
SANITARY ENGINEERING
TRAINING CAMPS
DEVELOPMENT BATTALIONS
STUDENT ARMY TRAINING CORPS
DIVISION OF SURGERY
GENERAL SURGERY
CHEST
ABDOMEN
FRACTURES
HEAD & NEURO-SURGERY
EYE
EAR
NOSE & THROAT
PLASTIC & ORAL
NEURO-SURGICAL
ORTHOPEDICS
UROLOGY
ROENTGENOLOGY
DIVISION OF MEDICINE
INTERNAL MEDICINE
TUBERCULOSIS
NEURO-PSYCHIATRY
PSYCHOLOGY
LABORATORY DIVISION
LABORATORIES
INFECTIOUS DISEASES
VENEREAL DISEASES
MEDICAL MUSEUM
VETERINARY DIVISION
HOSPITALS
SANITATION
MEDICINE
SURGERY
DIVISION OF PHYSICAL RECONSTRUCTION
RECONSTRUCTION
RECLAMATION DETACHMENTS
LIBRARY DIVISION
LIBRARY
HISTORY OF THE WAR
AIR SERVICE

CHART XXIV.

SECTION III.

VOLUNTARY AID.

By law and Army Regulations the Medical Department of the Army is charged with certain duties covering broadly everything having to do with the preservation of the health of troops and the care of sick and wounded. These duties were performed by the department in the World War, just as in our other wars, but never had they been supplemented so largely by the activities of other agencies. Indeed, it has been said that a distinct line of demarcation may be drawn between the World War and all former wars, in that former wars were conducted almost exclusively by the military forces of the combatant countries, voluntary aid being confined largely to assistance in the care of sick and wounded, whereas the vast extent of the World War brought whole nations to the aid of their respective military establishments. This was true of the United States as of other combatants. Virtually every citizen not enrolled with the fighting forces became actively engaged in some kind of war work, or added to his or her ordinary activities whatever special service could best be rendered in the concerted effort to help win the war. In many instances individuals banded themselves together for more effective service, and organizations already in existence contributed their quota of service and substance to the great cause.

A large proportion of this national contribution, quite naturally, was directed toward the maintenance of the good cheer and the good health of the fighting forces. Toward this end some contributed special comforts for the soldiers, sailors, and marines; others gave ambulances to facilitate the handling of the sick and wounded, men and animals; while still others equipped or helped to equip special hospitals or other institutions for use by the Medical Departments of the Army and Navy.

No history of the activities of the Medical Department of the United States Army during this great conflict could be written justly without according due credit to other departments of the Government and to the many volunteer agencies through which was expressed the desire of the American people to render aid during the emergency. Many of these voluntary activities may be said to have applied equally to all branches of the service, the Medical Department among the number, while others were concerned directly with the Medical Department in that they supplemented the efforts of the department directed toward the maintenance of the health of the Army as a whole and in caring for the sick and wounded. It is manifestly impossible to include here even a very brief account of the services of the large number of organizations and units throughout the country which, working independently or under the direction of or affiliation with the American National Red Cross, gave generously of their services and means along the lines of voluntary relief. In this section, therefore, are included reports of the activities of only such agencies as were concerned directly with the Medical Department, and which were authorized by Congress or by the War Department, or whose offer of cooperation was accepted by the Surgeon General.

In addition to aid which directly concerned the maintenance of health and the care of sick and wounded of the Army, the Medical Department received valuable assistance, notably during the days of preparedness activity and throughout the early months of the war, which was concerned largely with the mobilization of personnel, resources, and research for cooperation with or addition to existing Medical Department personnel and facilities.

Prior to the World War the Medical Department was restricted by the Manual for the Medical Department (1916, 535–541) in the utilization of voluntary aid to two classes: (1) Organized voluntary aid; (2) individual voluntary aid, which, in emergency, may be accepted from civilian physicians, nurses, litter bearers, cooks, and others, by the chief surgeon of a field army, a division surgeon, a surgeon of a base group, the surgeon of any organization operating independently, or the commanding officer of a general hospital. The present discussion is concerned only with organized voluntary aid.

CHAPTER I.

AMERICAN NATIONAL RED CROSS.

According to the Manual for the Medical Department it was permissible for the department to utilize organized voluntary aid to supplement the resources and to assist the personnel of the Medical Department through the American National Red Cross, under the authority of the act of Congress approved April 24, 1912.[1] This organization, in accordance with the terms of its charter,[2] is "a medium of communication between the people of the United States and their Army." No volunteer aid from any society or association, therefore, was to be accepted for the Army of the United States except through the American National Red Cross. This was true in the main during the World War with respect to organized voluntary aid in so far as it was applicable to the actual care of the sick and wounded, to the making of surgical dressings and other hospital supplies, and to the furnishing of comforts such as knitted garments, blankets, and other articles. Organized voluntary aid of this character was accepted by the Medical Department when offered through the medium of the Red Cross.[3]

The regulations, approved by the President of the United States, which governed—and still govern—the status, organization, and operations of this society when employed with the Army are given in the Manual for the Medical Department as follows:

> (*a*) The organized Red Cross units serving with the land forces will constitute a part of the sanitary service of the land forces.
>
> (*b*) When the War Department desires the use of the services of the Red Cross in time of war, or when war is imminent, the Secretary of War will communicate with the president of the society, specifying the character of the services required and designating the place or places where the personnel and matériel will be assembled.
>
> (*c*) When any member of the Red Cross reports for duty with the land forces of the United States, pursuant to a proper call, he will thereafter be subject to military laws and regulations as provided in article 10 of the International Red Cross Convention of 1906, and will be provided with the necessary brassard and certificates of identity.
>
> (*d*) Except in cases of great emergency, Red Cross personnel serving with the land forces will not be assigned to duty at the front, but will be employed in hospitals in the service of the interior, at the base, on hospital ships, and along lines of communications of the military forces of the United States.
>
> (*e*) Red Cross organizations will not establish independent hospitals or other institutions, but will assist military sanitary formations at the places above indicated.
>
> (*f*) Before military patients are assigned thereto, separate establishments maintained by the Red Cross Society will be placed under the immediate direction of a medical officer of the Army. Such officer will be held responsible for the management, discipline, and records of the institution; he will regulate admissions and discharges and see that the interests of both the Government and the patients are conserved.
>
> (*g*) No columns, sections, or individuals of the Red Cross Society will be accepted for service by the War Department unless previously inspected by a medical officer of the Army and found qualified for the service expected of them.

(*h*) The Red Cross Society may be called upon in time of war, or when war is impending, for the following classes of personnel: (1) Physicians and surgeons; (2) dentists; (3) pharmacists; (4) nurses; (5) clerks; (6) cooks and other hospital personnel; (7) litter bearers, drivers, and other transport personnel; (8) laborers.

(*i*) To facilitate the training of Red Cross personnel for the duties it may be called upon to perform in time of war, it is divided into three classes: Class A, those willing to serve wherever needed; class B, those willing to serve in the service of the interior only; class C, those willing to serve at place of residence only; class A will be organized into sections and columns uniformed and equipped as may be prescribed by the central committee of the Red Cross and approved by the War Department. Such organized and equipped sections and columns will be trained for service at the bases and along the lines of communication of the forces in the field.

Class B will be trained for service in hospitals and other sanitary institutions that may be established in the service of the interior. Individuals of this class may also be organized into sections and columns and uniformed and equipped as prescribed for class A.

Class C will be composed of individuals of local Red Cross Societies who, on account of their occupation or experience in the care of sick and other hospital duties, may be expected to render efficient service in military sanitary institutions established in their locality.

(*j*) The Red Cross service at the base, along the line of communications, or in a military district will be under the supervision of a director general, who will conduct the service under the direction of the chief surgeon of the field army or expeditionary force.

(*k*) For service at the base and along lines of communications Red Cross personnel will be organized into—field columns, hospital columns, supply columns, information bureau sections.

(*l*) Field columns will supplement and assist the regular transport in the transportation of patients from field hospitals to evacuation and base hospitals, by the use of litters, ambulances, hospital trains, trains for patients, hospital ships, and ships for patients; by the establishment of rest and food stations, and by the performance of such other duties as they may be called upon to perform. Field columns will be organized as follows: 1 director, 4 assistant directors, 4 section chiefs, 16 assistant section chiefs, 64 men. A field column will be composed of four sections, each consisting of—1 assistant director, 1 section chief, 4 assistant section chiefs, 16 men.

In addition to the above, each director of a column will have a staff of two section chiefs to keep the records and conduct the supply service of the column.

Directors and assistant directors must be qualified physicians in good standing.

The training of field columns should include instruction in first aid, elementary hygiene, and Hospital Corps drill. The personnel of such columns should be made practically familiar with the use of the various appliances (including improvisations) for transporting sick and wounded, such as litters, ambulances, and other vehicles, with the fitting up of trains and ships for patients and with other similar duties. Instruction should also be given in the organization and conduct of rest and food stations. Some personnel of each column should also be made proficient in methods of disinfection.

(*m*) Hospital columns must be prepared to supplement and assist military hospital formations, to perform the necessary ward service, and to take up certain branches of hospital work, such as laundering and repair of linen, the management of kitchens, etc. Sections of hospital columns may also be assigned to duty on hospital trains and ships and to other military sanitary institutions.

Hospital columns for service at the base and along the line of communications will be organized as follows: 1 director, 3 assistant directors, 6 chief nurses, 45 nurses; such number of cooks, ward orderlies, and laborers as may be necessary.

The hospital column will be composed of three sections, each consisting of—1 assistant director, 2 chief nurses, 15 nurses; such number of cooks, ward orderlies, and laborers as may be necessary.

In addition to the above, each director of a column will have a staff of two section chiefs to keep the records and conduct the supply service of the column, and such number of staff physicians as may be deemed expedient.

Directors, assistant directors, and staff physicians must be qualified practitioners of medicine in good standing.

The staff of the director of a hospital column may also include dentists.

The training of hospital columns should comprise, in addition to strictly professional subjects, practical instructions in methods and matériel used in evacuation and base hospitals, and in hospital trains and ships. Methods and means of improvising hospital accommodations from local resources should also be included.

(*n*) Supply columns, composed of pharmacists and others experienced in handling medical and hospital supplies, clerks, teamsters, and laborers, will be organized for the purpose of establishing and conducting a Red Cross supply service in connection with the military sanitary supply department.

The training of the personnel of supply columns must include practical instruction concerning the kind and character of supplies used in the sanitary service, the methods of purchase, inspection, distribution, and such methods of accounting as may be prescribed by the central committee of the Red Cross.

(*o*) Information bureau sections composed of clerks, stenographers, and typewriters will serve under the immediate supervision of directors general of the Red Cross, and will be instructed in methods of correspondence, and of obtaining the necessary information from military authorities concerning sick and wounded and the dead, for the purpose of furnishing such information to relatives and friends. Information bureau sections may also be attached to the bureau of information for prisoners of war.

(*p*) A register will be kept in the office of the Surgeon General of the Army, upon which will be entered the name, place, strength, equipment, and efficiency of organized Red Cross units. No organization will be entered on the register, however, unless it shall have been inspected and approved by a representative of the War Department. A Red Cross unit that has been inspected and found qualified will be carried on the register for one year after date of such inspection.

Applications from columns or sections for entry upon the Surgeon General's register will be forwarded through Red Cross channels to The Adjutant General of the Army.

Applications from columns or sections borne on the Surgeon General's register for continuance on said register will be submitted annually on or before June 1, through Red Cross channels, to The Adjutant General of the Army.

(*q*) Members of organized columns when in service will wear the uniform prescribed by the central committee and approved by the War Department. Their equipment will be assimilated to that used in the sanitary service.

(*r*) The personnel serving with the land and naval forces in time of war or threatened hostilities will, while proceeding to their place of duty, while serving thereat, and while returning therefrom, be transported and subsisted at the cost and charge of the United States as civilian employees employed with said forces. Red Cross supplies that may be tendered as a gift and accepted for use in the sanitary service will be transported at the cost and charge of the United States.

(*s*) Forage will be issued to Red Cross organizations in the field in case of emergency only, upon the guaranty of the Red Cross authorities that such issues will be replaced or the cost thereof refunded.

(*t*) When available, suitable quarters may be assigned to the Red Cross in active service.

WAR ACTIVITIES.

The following account of the war activities of the American Red Cross in the United States is based on a report furnished by the assistant director general, department of military relief. The account of the work of this organization overseas is given elsewhere (Volume II, Administration, American Expeditionary Forces).

SCOPE OF ACTIVITIES.

The participation of the American Red Cross in the medical and surgical work of the Medical Department of the Army was confined largely to overseas territory, while in this country it included assistance in the organization of hospitals, hospital units, and ambulance companies which were absorbed into the regular medical service.

BASE HOSPITALS.

Prior to the declaration of war by the United States the American Red Cross had organized the department of military relief, the function of which was to render assistance from the Red Cross to the Medical Department of the

United States Army and Navy. This department adopted a concrete plan of preparedness for war by organizing base hospitals in connection with a number of the large civilian hospitals and medical schools in various cities throughout the country. A full account of this preliminary work, which may be said to have been the foundation upon which the overseas hospital service was organized and conducted, is given in the introduction (pp. 92 et seq.).

AMBULANCE COMPANIES.

With the same idea of preparedness the American Red Cross authorized the organization, in the Red Cross, of ambulance companies to correspond with the companies in the Medical Department,[4] except that the Red Cross companies were motor companies, whereas up to 1916 the Army had made no provision for such motorized companies,[5] all the Regular Army companies being provided with animal-drawn vehicles. By the early spring of 1917, 46 ambulance companies had been organized.[6] As rapidly as the organization of the personnel of these companies was completed they were transferred to the Army Medical Department, assigned by it to the various divisions of the Army as Regular Army companies, and were dispatched overseas.[7] Complete equipment of motors and other things pertaining to such companies were provided, in most instances by the local Red Cross chapter or through the Red Cross by individuals interested in the unit. The account of activities of these companies overseas may be found elsewhere (Vol. II, Administration, American Expeditionary Forces, and Vol. VIII, Field Operations, American Expeditionary Forces)

SANITARY TRAINING DETACHMENTS.

The purpose of the sanitary training detachments of the American Red Cross at all times is primarily to teach first aid in a systematic way. In addition to this, however, the Red Cross undertakes to give a course of training such as is given to sanitary troops (Medical Department enlisted men), thus to build up a reserve of men, more or less trained, who would be available for enlistment in the Medical Department of the Army or Navy when needed. To accomplish this, the Red Cross chapters organized a large number of these detachments, and many of the men so trained before and during the war found their way into service with the Medical Department. These detachments as such had no military status, being solely for the purpose of education along the lines mentioned.

BUREAU OF CAMP SERVICE.

Soon after our forces began to assemble, it developed that the Red Cross, through its department of military relief, must assume greatly enlarged responsibilities in addition to its actual work of assistance to the Medical Department. To carry out this plan, the bureau of camp service was inaugurated, whose function was to extend Red Cross service to all the forces. The so-called hospital service became a feature of this service. Red Cross convalescent houses were built in connection with each hospital to provide a place of recreation and amusement for sick and wounded soldiers able to be up and around. There was also built in connection with each nurses' house a recreation house for the nurses. In the convalescent house Red Cross personnel was provided to care for Red Cross work among the sick and wounded.

This included efforts to amuse and entertain the men by reading to them; by writing letters to their friends and families; by arranging entertainments, amateur or professional; by teaching them games; by teaching them handicraft. For the entertainments, a stage was provided with scenery and all the necessary appurtenances thereto. Books and magazines were supplied through the American Library Association, which installed a library in each house. Rooms were provided in the house where relatives of seriously sick men might spend the night, if necessary. The main object of this service was to assist the Medical Department in its care of the sick and wounded and to make them feel that their home people had a very active interest in their welfare.

The hospital service of the Red Cross, which was directly under the control of the commanding officer of the hospital, was largely made up of women volunteers, who were there to add a touch of home comfort to the sick, to keep the families advised as to the conditions of their men, to urge upon them the need for letting their families hear from them, and to endeavor on all occasions to care for their domestic troubles, in this way removing from their minds all causes for anxiety and worry. This judicious systematic assistance, without excess of sentimentality, proved of great assistance to the Army.

BUREAU OF MOTOR SERVICE.

The entrance of the United States into the World War and the tremendous expansion of our Army and Navy called for corresponding increases in the activities of the American Red Cross, which involved large demands for motor transportation of matériel, equipment, and personnel. At first this was paid for out of Red Cross funds or, irregularly, by chapter members. Soon, however, some of the chapters realized that this service should be made regular and reliable, and accordingly a few motor corps were organized. The value of the service became so apparent that on February 1, 1918, the bureau of motor service was created at national headquarters in Washington, for the purpose of organizing, regulating, and directing Red Cross motor service throughout the United States.[4] Rules and regulations, uniforms, and insignia were adopted, and motor corps were organized in many chapters throughout the country, which cooperated with the various other Red Cross activities and with the military and naval authorities. This resulted in the saving of much time and great expense and in the release of men who would otherwise have been required for such service.

The whole motor service was composed of women volunteers who donated not only their time and work, but in nearly all cases their cars and expense thereof, as well as their own uniforms. In addition, those who wished to qualify for the "first division" of the motor corps (ambulance and truck drivers) were obliged to pass examinations in motor mechanics, first aid, sanitary drill, and driving, and were given certificates only upon being passed.[4] The "second division" (transportation drivers), though in uniform, were only required to have a knowledge of simple mechanics, of good driving, and of traffic rules.[4] This division had auxiliaries, not in uniform, who gave intermittent or lesser service or served when called upon. In some of the larger centers of population and at ports of embarkation and debarkation garages for the cars and ambulances and dormitories for the women were arranged for or built for the purpose. At the time of the signing of the armistice there were nearly 300 motor corps, with a membership of approximately 11,000. Approximately 300 ambulances were in this service in the United States.[4]

BUREAU OF CANTEEN SERVICE.

The expansion of the Army upon the entry of the United States into the war was so rapid that the problem of transporting the enormous number of men and the necessary equipment and supplies presented a task fraught with all but insurmountable difficulties. The War Department was confronted by a serious problem in providing additional food, medical supplies, and medical care for the men en route to the great concentration camps. To help meet this emergency, the Red Cross, early in June, 1917, organized in the department of military relief the bureau of canteen service.[4]

A national director of canteen service was appointed, an immediate survey of the country was made, and a division director of canteen service was appointed in each of the 14 Red Cross divisions. Each division director promptly covered every railroad in his division, located the strategic railroad points, decided where canteen service should be inaugurated, and then issued instructions to the chapters to proceed with the organization. A national call was sent out to the women of America explaining the nature of this service. Within a comparatively short period more than 50,000 women had responded to the call of the canteen directors, and 700 well-organized units of specially selected women were in operation. There was a canteen at every important railroad junction and terminal in the United States, and several were established in Canada. Canteen huts, transfer hospitals, first-aid rooms, stock rooms, recreation rooms, shower baths, and other facilities were immediately erected at over 300 points along the lines of travel. Close and intimate contact was established with the railroad and Army officials, so that the canteens were advised by telegraph, in advance of movements of drafted men to camps, of movements of troops from camp to camp and from camps to embarkation points. Sweaters, comfort kits, magazines, food, fruit, and flowers were given to the men; bands of music were provided and banquets were served. The canteens along the line met them; no matter how late at night, what day of the week, or what the weather conditions were, the canteens were always on duty. All during the winter the little canteen huts remained open day and night. In the heat of summer large batteries of shower baths were installed and operated at fixed points along the lines of travel. The effect of the canteen service worked like magic on the men.

Arrangements were made with the Army officials so that if troop train commissary officers found their supplies exhausted and desired to procure new supplies, they could telegraph ahead to a canteen and articles and foodstuffs would be purchased for them at cost. Complete meals and lodging could be arranged for if desired. Instructions were issued by the Surgeon General that troop train commanders in need of the services of surgeons, physicians, or dentists en route should call on the Red Cross canteen, wherefor such service would be promptly supplied.[4]

Relatives were put in touch with their soldier kinsmen, home troubles were taken care of, and every conceivable service was rendered by the canteens for the relief and comfort of the men in transit.

By cooperation with the bureau of canteen service, the Surgeon General's Office arranged with the Red Cross canteens to take sick men from trains; to give receipts to the commanding officer; to transfer the men to military or private hospitals along the lines; to care for their service papers; to arrange for medical, surgical, and dental attention; to notify the parents; and to advise the proper commanding officers.[4] The canteens sent the men back to their posts after they recovered their health and were able to rejoin their commands.[4] Funeral arrangements of men who died were made by the canteens; accompanied by escorts, the bodies were shipped to relatives. The records of the bureau of canteen service showed that up to Decemder 30, 1918, more than 50,000,000 canteen services were rendered men in transit. More than 103,000 men who became sick en route were aided, and over 9,000 sick men were removed from trains and transferred to hospitals along the lines of travel.

Some of the supplies distributed without charge are enumerated to show the scale on which the canteen service operated: 1,206,480 gallons of coffee, 8,369,664 sandwiches, 5,523,396 pieces of reading matter, 5,075,172 boxes of matches, 95,408,640 cigarettes, 475,992 pounds of tobacco, 996,816 pounds of candy, 6,184,372 bars of chocolate, 32,143,704 postal cards, 97,368 bushels of fruit, 538,416 meals and lunches.

American Red Cross canteens were established at each port of embarkation in the United States and Canada. Storerooms, emergency hospitals, coffee plants, and kitchens were promptly built and completely equipped. Specially trained corps of women were organized for the work at the embarkation piers. The canteens were notified as each ship arrived in port. Canteen service in abundance was provided at every point of embarkation.

The signing of the armistice and the announcement of returning transports, with both wounded and well men, found the Red Cross canteens prepared, organized, and equipped to render valuable service. Enormous quantities of food, coffee, cigarettes, chocolate, and flowers were distributed—telegrams sent, postal cards mailed, and all kinds of service rendered. Canteens along the line of travel of the returned men were decorated and made ready to cheer the men on their homeward journey into the large debarkation camps.

The problem of receiving the returned wounded was promptly met. Through permission of the port surgeons, canteens were established on each of the harbor transfer boats and at every pier at which wounded men were to be received. The bureau of canteen service immediately put on traffic experts at each of the important ports and began cooperating with the Railroad Administration and the medical officers so that advance information was obtained of all movements of hospital trains or cars of sick and wounded men attached to regular trains. This information was immediately relayed to canteens along the lines of travel. Special hospital train time-tables and maps were prepared by the canteen bureau and supplied to each medical officer in charge of the men.

Several hundred specially selected women were appointed as canteen escorts, two of these women being placed on each hospital train leaving the debarkation hospitals, riding on the trains with the men during the daylight hours, to render every aid possible, and to see that the canteens along the line functioned effectively with the wishes of the commanding officers of the train. The canteens throughout the country organized canteen escort service, and each morning relays of escorts boarded the hospital trains at various points on the journey across the continent from debarkation hospitals to inland hospitals.

At the time of the signing of the armistice the problem of demobilizing the overseas men had to be faced. It was the privilege of the American Red Cross to perform the final acts of kindness and to express the appreciation of the American people to these men returning to civilian life. At all important junctions transfer hospitals, check rooms, recreation rooms, kitchens, and lodging quarters were opened to take care of the individual soldier who might find himself stranded in a big city. Many men missed their trains, took wrong trains, lost their money, were taken ill, and numerous other things happened to them. The canteens promptly met this situation, and rendered all manner of service as required. The stimulus of the excitement of winning the war had passed, but the women of the American Red Cross canteens stood by their posts and refused to leave them until the need had entirely passed and the last man was demobilized.

A welcome home roll was arranged by the canteens throughout the country. Each man was asked to register upon his arrival in his home, so that his name could be published in the papers for his friends to know of his safe arrival. His name and address were turned over to the home service section, which aided him in his domestic affairs and assisted him, if necessary, in securing employment.

The expenses of operating American Red Cross canteens in the United States and Canada were met by appropriations by the War Council; by appropriations by the chapters; by donations to the canteens.

The war council appropriated for this six months' period $250,000 for canteen work at embarkation and debarkation ports and for the general expenses of providing canteen service at important railroad junctions throughout the country. Expenditures under this appropriation amounted to $149,632.61 and were distributed as follows:[4]

Newport News	$81, 842. 25
Halifax	17, 528. 37
Washington, D. C.	10, 651. 22
Montreal	9, 415. 10
Port of New York	4, 514. 06
Supplies furnished various chapter canteens	25, 681. 01
	149, 632. 61
Unexpended balance returned to American Red Cross treasury	100, 367. 39

The cost of canteen service in the chapters amounted to $554,257.09, all of which was financed from chapter funds. The following table shows the distribution of expenses by divisions:[4]

Division:	Cost.
New England	$10, 390. 44
Atlantic	122, 087. 29
Penn-Delaware	67, 836. 19
Potomac	68, 675. 61
Southern	56, 498. 26
Lake	52, 376. 21
Central	58, 811. 99
Gulf	20, 954. 30
Northern	5, 324. 23
Southwestern	54, 078. 33
Mountain	8, 975. 36
Northwestern	8, 877. 53
Pacific	19, 381. 35
	554, 257. 09

The value of supplies donated amounted to $193,604.225. The following table shows the distribution by division:[4]

Division:	Value of supplies donated.
New England	$626. 66
Atlantic	52, 219. 69
Penn-Delaware	24, 958. 94
Potomac	21, 296. 05
Southern	28, 226. 23
Lake	15, 467. 69
Central	10, 352. 10
Gulf	4, 199. 70
Northern	1, 868. 10
Southwestern	15, 789. 10
Mountain	4, 431. 67
Northwestern	7, 472. 29
Pacific	6, 696. 03
	193, 604. 25

In addition to expenses incurred by the canteens for furnishing free service, supplies were purchased by the canteens on request of troop train officers to the total amount of $37,946.56. Reimbursement was made by troop train officers for these supplies.

Summary of expenses of canteen service is as follows:[4]

National headquarters	$149, 632. 61
Chapters	554, 257. 09
Donations	193, 604. 25
Expenses reimbursed by troop train commanders	37, 946. 56
	935, 440. 51

Estimate of number of canteen services performed during 12 months' period ending December 31, 1918:[4]

Soldiers	41, 474, 400
Sailors	2, 016, 552
Marines	437, 712
Draft men	4, 912, 680
Total	48, 341, 596
Sick men aided en route	103, 752
Sick men removed from trains	7, 056

There were approximately 55,000 volunteer women workers in the American Red Cross canteens. No commercialism whatever was permitted to enter the work; no money changed hands between the individual soldiers and the canteen workers—all service was gratis. The record of the canteen bureau is a tribute to the efficiency, patriotism, and devotion to duty of the wonderful American women of whom its entire membership was composed. It was a woman's task, and the women of the country responded without hesitation and without limitation. It is believed that there was not a man in the service, soldier, sailor, or marine, in this great war who did not, at some time in his military career, partake of the hospitality of the American Red Cross canteen service or receive aid in some way from this bureau.

FIRST-AID DIVISION.

Long before the war the first-aid division of the American Red Cross engaged in the dissemination of instruction to the people of the United States, so that they could take better care of themselves in cases of minor injury, and in this way lessen the more serious results that so often follow the neglect of what may seem but trifles at the time. It was hoped that the services of trained nurses could be conserved and a great number released for the care of those wounded in battle. It was foreseen that enough trained nurses would not be obtained, and that it would be necessary to utilize the services of aides; hence, a training in first aid was considered a groundwork on which untrained women could build toward a larger knowledge of this work. On the theory that a little training properly given was better than none, thousands were induced to take the first-aid course. The majority of the graduates in first aid were intelligent, common-sense Americans, anxious to help in a work that needed assistance. The American Red Cross believed that first aid as taught in classes was well done, and that the graduates, when carefully selected as to fitness, would be of immense assistance to the Army Nurse Corps in caring for the sick and wounded in military hospitals. Under the supervision of the nurse in charge of the ward, these women could help in serving the diets in a tasty manner; they could be trained to make beds, to give baths, and to help the nurses in many of their routine duties.

BUREAU OF SANITARY SERVICE.

The bureau of sanitary service was established in July, 1917, to give aid to Federal, State, and local authorities in procuring and maintaining effective sanitary control in the civil districts surrounding or adjacent to National Army cantonments, National Guard camps, and naval bases.[4]

Thirty-six sanitary units were established. The personnel of each unit consisted of director, United States Public Health officer (services paid by the United States Government); fiscal officer (services free); bacteriologist, sanitary inspectors, Red Cross trained nurses, all paid by the American Red Cross. The activities of the sanitary service included [4] supervision of public and private water supplies; proper disposal of human excreta; proper disposal of manure, garbage, and other wastes, especially to control fly breeding; proper control of food supplies, requiring constant inspection of dairies, markets, restaurants, and refreshment stands; direct control of all communicable diseases, with full and prompt report of all cases, and establishment of necessary isolation and cure; and vaccination against smallpox and typhoid.

One of the major problems was the prevention of malaria by the eradication of the anopheles mosquito, which was accomplished by draining pools and marshes, channeling water courses, and oiling all ponds of still water. People were urged to take quinine, and they were instructed to erect screened fly-proof privies. Wells were found adjacent to privies in thousands of yards. Open sewers were common. Butcher shops, with meat displayed on open counters, covered with flies, and filthy restaurants, springing up like mushrooms seeking the soldier trade, flourished near all the Army camps. When a reprimand from the director to the proprietors of these shops failed, a call for help to the adjacent division surgeon called forth the military police, with authority to stop any uniformed man attempting to enter an inspected and condemned eating establishment "out of bounds." The proprietors soon came to realize that there was to be no trade without cleanliness.

The Red Cross and the United States Public Health Service did not undertake to treat sick men in the Army camp; their field lay in keeping the people well who served the soldier and sailor, so that no contaminating disease might spread from city to camp. To further this idea and to meet what proved to be the greatest single source of soldiers' illnesses, 26 venereal clinics were established in as many cities where units existed.[4] These clinics were free and men with syphilis and gonorrhea flocked to them by the thousands. Fully 40,000 civilians were treated in these clinics. Salvarsan or arsphenamine was sent to the venereal specialists in charge of these clinics by the thousand doses. Isolation hospitals for venereal patients were established and maintained at Chattanooga, Tenn.; Newport News, Va.; Alexandria, La.; El Paso, Tex.; and Petersburg, Va.[4]

The necessary authority to maintain health standards was vested in the United States Public Health official, the director of the unit, delegated to him by local, State, municipal, and county authorities, this condition having been made by the American Red Cross before they agreed to establish a unit. Funds to meet the requirements were almost totally lacking locally, so the Red Cross and the United States Public Health Service had to help. The standard of health throughout the Army camps was raised by the results accomplished by the sanitary units.

SURGICAL DRESSINGS AND HOSPITAL GARMENTS.

With the development of the Red Cross organization the efficiency of chapter workrooms increased so that by the end of 1917 it was evident that it would be possible to provide surgical dressings in almost any quantity needed. Therefore, after a conference between the Surgeons General of the Army and Navy, a plan of production was elaborated whereby the Government was to furnish the material and the Red Cross to make up the dressings needed by the military and naval services in accordance with specifications outlined. The first order for surgical dressings was received March 8, 1918; the total deliveries of surgical dressings to the Medical Department of the Army up to February 1, 1919, follows:[4]

Weight bags	1,040
Elbow traction bands	1,500
Many-tailed bandages	220,436
Scultetus bandages	65,192
Gauze compresses (sterile dressing pads)	3,276,590
Gauze compresses	1,006,843
Pneumonia jackets	56,199
Oakum pads, size 1	56,235
Oakum pads, size 2	7,918
Sphagnum moss pads, size 1	30,695
Sphagnum moss pads, size 2	13,605
Unsterile dressing pads:	
Type 1, size 1	1,237,907
Type 1, size 2	966,592
Type 2, size 1	435,926
Type 2, size 2	288,513
Front line parcels, red seal	1,801,995
Front line parcels, white seal	1,513,003
Front line parcels, blue seal	991,506
Heel rings	22,673
Gauze rolls, 3 yards	36,108
Gauze rolls, 5 yards	372,334
Small sponges	4,195,591
Gauze sponges (large)	1,952,983
Leg support	500
Arm support	701
Perineal support	500
Gauze wipes	1,372,059
Slings	122,675
Total	20,047,819

At the time the original agreement was entered into regarding surgical dressings, the Red Cross furnished the Medical Department of the Army with models of some of its hospital garments and supplies. The first order for these was for 1,350,000 pajamas, 500,000 operating gowns, 1,736,000 bed sheets, 170,000 convalescent robes. Up to February 1, 1919, the Red Cross had delivered the following quantities:[4]

Operating gowns	85,707
Bed shirts, summer	704,647
Bed shirts, winter	160,604
Pajamas, American, winter	389,910
Convalescent robes (bath robes)	136,261
Total	1,477,129

At the time the agreement was entered into it was the belief of the Medical Department and the Red Cross that a fairly even balance between the two, either for materials or for finished dressings, would be maintained. Because of unavoidable delays in securing material, however, and the fact that the Red Cross was able to make delivery of large quantities of finished articles from stocks made up for distribution through its own channels, the balance in favor of the Red Cross in material, according to agreement, kept increasing and had reached a very considerable sum by December 1, 1918. As Red Cross requirements for surgical dressings and hospital supplies, after the cessation of hostilities, could be met from stocks already on hand, negotiations were entered into with the Medical Department of the Army to secure a settlement of the balance in favor of the Red Cross by a cash payment rather than return of material, as originally agreed. Such a settlement was made.

RED CROSS INSTITUTE FOR CRIPPLED AND DISABLED MEN.

The importance of the problem of the reconstruction of American wounded soldiers and sailors engaged the attention of the department of military relief soon after the declaration of war and an institute for the reeducation of cripples was started in New York City.[4]

In order to put the institute on a practical working basis, classes were begun for cripples from civil life, and teachers were trained in the handling of cripples. Various courses were inaugurated,[4] such as artificial limb making, drafting, operating moving-picture machines, using linotype and monotype machines, oxyacetylene welding, stenography, and business courses. An employment bureau for the placement of cripples was established and surveys of industries made to find suitable employment for the disabled.

The reconstruction problem was studied from all angles[4] by collecting all the available information from the belligerent countries on the subject of rehabilitation, and the institute soon became an authoritative source for all who sought the latest information from abroad.

In order to truthfully inform the American people as to the possibilities of reconstruction, a campaign of public education was initiated, approved by the Surgeon General.[4] Posters, booklets, moving-picture slides with lectures, were utilized. A popular magazine, *Carry On*, was financed by the American Red Cross and edited by the Surgeon General, in which the problem was discussed in an intelligent way, so as to place it before the people.[4]

RED CROSS INSTITUTE FOR THE BLIND.

The Red Cross Institute for the Blind, organized in connection with the United States Army General Hospital No. 7, at Roland Park, Md., was originated for the purpose of guiding the work which the Red Cross wished to do for the benefit of American soldiers.[4]

A suitable building, adjacent to the hospital, was secured as the headquarters for the Red Cross work and as a convalescent recreation house for the blinded men.[4] Additional quarters in the city of Baltimore were utilized as a home for the relatives of these men while visiting or taking the course of instruction to fit them as companions for their blinded husbands, brothers, or sons, it being considered essential that the blind man have a trained companion to guide him through his future darkness.[4] The relatives were trained to read and write Braille and to look after the blind man in every way.[4]

The Red Cross Institute was able to add to the salaries of the trained teachers, so that those who could not afford to give their service for the salaries allowed by law could be secured.[4] No comprehensive survey of industry for the placement of the blind had ever been made, and as it was essential that information of this sort be obtained, the Red Cross employed expert industrial engineers to find out what industry could do for the blind,[4] so that the vocational training could be carried out along scientific and sensible lines. The results of these surveys demonstrated that blind men may be employed on many industries and, when properly trained, will render very satisfactory service.

Through its volunteer workers the Red Cross Institute was able to provide enough teachers to give each man an individual teacher—an absolute necessity in such work as teaching Braille, and the use of the typewriter, and in training the hands, as in weaving nets, baskets, hammocks, or in simple cabinetmaking and carpentry; also in training the ears, as in piano tuning. In all this work the Red Cross was careful not to duplicate the work of the Medical Department.

REFERENCES.

(1) Act of Congress, approved April 24, 1912, 37 Stats. 90.
(2) Act of Congress, approved January 5, 1905, 33 Stats. 600.
(3) Special Regulations No. 61, October 8, 1917; G. O. No. 17, W. D., February 13, 1918.
(4) The American Red Cross Assistance to the United States Medical Department in the United States, by Lieut. Col. C. H. Connor, M. C. On file, Historical Division, S. G. O.
(5) Annual Report of the Surgeon General, United States Army, 1916. 213.
(6) Memo. for Colonel Munson, September 4, 1917. Subject: Red Cross Ambulance Companies. On file, Record Room, S. G. O., 171059 (Old Files).
(7) Shown on reports of organizations. On file, Record Room, S. G. O., Correspondence File, 322.3 (number of ambulances) (A).

CHAPTER II.

AMERICAN RED STAR ANIMAL RELIEF.

In April, 1916, the president of the American Humane Association offered the services of this organization and its allied societies to the War Department for the purpose of rendering assistance in the event of war to wounded animals employed by the Army; furnishing base hospitals, veterinary supplies, and ambulances in a capacity similar to that in which the Blue Cross functioned for the allied foreign armies.[1] On May 22, 1916, the Secretary of War invited the society to cooperate much after the manner of the Red Cross for human beings in the Army.[2]

As a result of this invitation the American Red Star Animal Relief was organized under the auspices of the American Humane Association to perform this work.[3] Although encouraged by the Secretary of War in May, 1916, it was not until June 7, 1918, that this organization was officially authorized to function with the Army, to furnish emergency aid and such supplies as were not available from the War Department, as well as special equipment unattainable through regular appropriations.[4]

The Red Star rendered valuable service and in many instances supplied medicines, dressings, and other accessories to veterinary hospitals.[5] A leaflet on first aid for Army horses was prepared and gratuitously distributed by the Red Star to soldiers handling horses, on the request of officers and veterinarians. Over 80,000 of these pamphlets were distributed for Army use.[5]

Eleven motor veterinary ambulances of a type acceptable to the commanding general were supplied to the American Expeditionary Forces at a cost of $57,522.[5] Seven other ambulances, motor or horse drawn, were furnished Army cantonments and camps in the United States.[5] Two were held in reserve by headquarters, making a total of 20 veterinary ambulances purchased by the Red Star.[5] In this country four automobiles and 10 motor cycles (seven with side cars) were furnished for the use of camp veterinarians in order to permit them to visit sick and injured animals at distant points and to take the necessary supplies.[5] Several supply buildings were erected, and large quantities of bandages, surgical instruments, drugs, stable supplies, etc., at the request of veterinary officers, were sent to Army camps.

There was expended by the Red Star for Army supplies a total of $99,299.91.[5] Of this amount the sum of $69,248.68 was paid out by headquarters, and $30,051.23 expended direct by local departments and individuals with the approval of headquarters.

REFERENCES.

(1) Letter from the American Humane Association to the War Department, April 15, 1916. Subject: Animal Relief. On file, Old Files Section, Mail and Record Division, A. G. O., 2396301.

(2) Letter from the Secretary of War to Dr. William O. Stillman, president of American Humane Society, Albany, N. Y., May 22, 1916. Subject: Rendering Assistance to Wounded Animals Employed by the Army. On file, Record Room, S. G. O., Correspondence File, 080 (American Red Star Animal Relief) (T).

(3) Letter from Dr. William O. Stillman, the director general, American Red Star Animal Relief, to the Surgeon General, June 30, 1917. Subject: Organization of American Red Star Animal Relief. On file, Record Room, S. G. O., Correspondence File 080 (American Red Star Animal Relief) (T).

(4) Letter from the Secretary of War to the director general, American Red Star Animal Relief, June 7, 1918. Subject: Authority for Red Star Animal Relief to Function. On file, Record Room, S. G. O., Correspondence File, 080 (American Red Star Animal Relief) (T).

(5) Memo. from the director of Veterinary Corps to the Assistant Secretary of War, February 27, 1919. Subject: Aid Furnished by the Red Star. On file, Record Room, S. G. O., Correspondence File, 080 (American Red Star Animal Relief) (T).

CHAPTER III.

THE COMMITTEE ON MEDICINE, COUNCIL OF NATIONAL DEFENSE.

The following account of the medical activities of the Council of National Defense is based on a report rendered by the chairman of the committee on medicine.[1]

ORGANIZATION.

The national defense act of June 3, 1916, created the Council of National Defense and the advisory commission.

The council was composed of six members of the President's Cabinet—the Secretaries of War, Navy, Interior, Agriculture, Commerce, and Labor. The council nominated and the President appointed an advisory commission of seven especially qualified persons, each having knowledge of one great field. The General Medical Board, composed of representative medical men, was organized for the purpose of aiding in the enormous expansion of the various Government bureaus and coordinating with their work the resources and talent of the civilian medical profession. The board thus represented the civilian medical population in its relation to the four Government administrative offices of the Surgeon Generals of the Army, Navy, and Public Health Service, and the Red Cross, and through it the organization for war of the medical profession was carried out.

MEDICAL MOBILIZATION.

In the winter of 1916, when the necessity for a greatly enlarged Military Establishment became apparent in view of the possibility of this country entering the war, the committee on medicine of the Council of National Defense directed its energies to formulating plans for mobilizing the medical profession for service in the Medical Departments of the Army and the Navy. From a membership of approximately 1,800, including men beyond the military age and those physically ineligible for active field duty, the Medical Reserve Corps was increased to 21,000 by the end of the first year. At the time of the armistice, November 11, 1918, 30,144 physicians from civil life were in the service of the Army.

COMMITTEE ON STANDARDIZATION.

Because of the impending enormously increased demand on manufacturers of medical and surgical supplies to meet military needs, the committee on standardization was authorized February 2, 1917, for the purpose of standardizing essential medical and surgical supplies and equipment and to increase speed and reduce cost of production. This committee included in its membership representatives of the Army, Navy, and Public Health Service, and American Red Cross. Various subcommittees representing the medical specialties and manufacturers were appointed. With the hearty cooperation of the manufacturers, who gave freely of their time and willingly adapted their facilities to Government needs, the result was an increase in the production of staple articles sufficient to meet the increasing requirements of the Army and Navy. Four catalogues of staple medical and surgical instruments and supplies were prepared and issued by this committee.

The Drug Division conducted an investigation of medical products for the Office of the Surgeon General of the Army and the Bureau of Medicine and Surgery of the Navy. In cooperation with other departments, inquiries were made into shortage of important drugs, the conditions being relieved in the majority of instances upon the organization of the War Industries Board. This committee was continued by the Section of Medical Industries of the War Industries Board.

GENERAL MEDICAL BOARD.

On April 2, 1917, the chairman of the committee on medicine nominated and the Secretary of War appointed a representative group of medical men to serve on the General Medical Board. An executive committee was appointed by the chairman to pass upon all matters brought before the larger body for consideration. The executive committee was composed of Surg. Gen. W. C. Gorgas, of the Army; Surg. Gen. W. C. Braisted, of the Navy; Surg. Gen. Rupert Blue, of the United States Public Health Service; Rear Admiral Cary T. Grayson, U. S. N.; Franklin Martin, M. D., chairman of the Committee on Medicine; F. F. Simpson, M. D.; W. J. Mayo, M. D.; C. H. Mayo, M. D.; Victor C. Vaughan, M. D.; and W. H. Welch, M. D.

In line with the general policy of the Government to secure the best talent available in all lines of activity for the care and welfare of the Army then in process of formation, committees representing every specialty in medicine were appointed by the General Medical Board. The committees were composed of the leaders in their respective specialties and representatives of the governmental medical departments.

These volunteer workers met at frequent intervals and in their advisory capacity laid down the general scientific program which was followed by the Government medical bureaus in the conduct of their activities during the period of the war. Shortly after their organization many of these committees were gradually absorbed by the executive bureaus of the Government and their work continued as working components of the military machine.

By this plan American doctors were enabled to work in the Army in line with their civil experience for the first time in history.

COMMITTEE ON COMBATING VENEREAL DISEASES.

One of the most important and far-reaching contributions of the General Medical Board toward the successful prosecution of the war was its active interest and energetic assistance in the work of its committee on civilian cooperation in combating venereal diseases. An educational campaign for national support of the social hygiene program was inaugurated through the distribution of circulars and circular letters; joint conference of medical and lay citizens; cooperation with advertisers and press association committees; communication with governors of all the States by wire and letter, urging recognition of the emergency and drastic action in dealing with venereal diseases; suggestions to

State boards of health as to measures essential to a successful campaign; appeals to pharmaceutical associations and boards of associations and boards of pharmacy to eliminate the advertising and sale of venereal disease nostrums; and requests to mayors of a thousand cities and towns, especially in the vicinity of camps, to enforce existing laws and to enact necessary legislation. Many lecturers were sent out, and editors of health bulletins and labor journals were kept informed regarding the progress of the campaign. Extensive use was made of the cinematograph, and "movie" pictures proved to be very popular and instructive.

COMMITTEE ON DENTISTRY.

Within a year after the United States declared war against Germany the number of dental officers was increased in the Dental Corps of the Regular Army from 58 to 209, in the National Guard to 259, and in the Dental Reserve Corps to 5,196—a sufficient number to supply the quota permitted by law for an army of 5,664,000 men.

In the rapid development of the dental service all credit is given to the patriotism of the members of the dental profession, the various preliminary dental examining board, dental faculties, dental manufacturers, and officers and members of the Preparedness League of American Dentists. The official record showed 613,285 gratuitous dental operations performed by the members of the last-named organization. This organization was also largely responsible for the three dental motor-car ambulances presented to the Surgeon General of the Army.

The committee on dentistry cooperated with the deans of dental schools and arranged for the enlistment of dental students in the Enlisted Medical Reserve Corps and their assignment to the inactive list. A survey of dental and oral hospital physicians was made. Improved courses in the Army and Navy Medical Schools for Army and Navy dental surgeons were recommended. A school of instruction for dental officers was opened March 15, 1918, at Camp Greenleaf, Fort Oglethorpe, Ga.

The United States was, thus, the only country giving extensive training in military and professional subjects to dentists, and this Nation had a greater number of dental officers subject to military call than all other allied nations combined.

In cooperation with dental manufacturers, dental instruments and supplies were standardized.

EDITORIAL COMMITTEE.

With the idea of being of immediate and direct benefit to the largely increased numbers of medical officers who had not had military medical experience, the General Medical Board authorized the editorial committee to proceed with plans for the publication, in pocket manual form, of textbooks epitomizing the surgical and medical experience acquired in the war up to the time of going to press, and written by men especially qualified by training and by war experience; eight of these manuals were prepared.

COMMITTEE ON HOSPITALS.

Through the efforts of the committee on hospitals the general hospitals of the country were reorganized in order to release for military service as many as possible of the members of their staffs.

The hospitals were classified as to size, convenience to railroads, facilities for expansion, and equipment for handling special work. The various special, private, and convalescent hospitals, sanatoria, and dispensaries were inventoried, and the various phases of the hospital needs, present and presumptive, were investigated.

COMMITTEE ON HYGIENE AND SANITATION.

The efforts of this committee were largely directed to questions concerning the combating of venereal diseases and the control of the sale of alcoholic beverages within the camps and extra cantonment zones. It also concerned itself with the problems of drug addiction, public health nursing, tuberculosis, and health statistics.

COMMITTEE ON INDUSTRIAL MEDICINE AND SURGERY.

This committee, which was organized on January 28, 1918, included in its membership representatives of the Departments of Agriculture, Commerce, Interior, and Labor, of the United States Public Health Service, and of industry, manufacturers, and the medical profession.

The committee recognized that the state of war made it imperative (1) to provide against unnecessary human waste in industry and society during the war; (2) to offset the drain on industry of man forever caused by the raising of military forces; (3) to meet the need for greatly increased production; (4) to avoid preventable deaths and disabilities from accident and disease; (5) to restore to full producing power in the shortest possible time sick and injured workers; (6) to increase output by keeping workers in good health; (7) to provide healthful places in which to work; (8) to provide healthful homes and communities in which to live; (9) to meet shortage of medical service inducted by military needs. A program was outlined along these lines, which, upon the recommendation of the Council of National Defense, was referred to the United States Public Health Service for execution.

COMMITTEE ON LEGISLATION.

The committee on legislation interested itself at the outset in the safeguarding of troops from vice in the zone around camps and cantonments, section 13 of the Army bill of 1917 being the result of its activities in this direction.

Through this committee the authorities were induced to provide for the enlistment of medical students of recognized schools in the Medical Enlisted Reserve Corps, thus, while not exempting them from military service, allowed them to finish their course.

Through the efforts of the committee the Federal Trade Commission granted licenses to American concerns to manufacture salvarsan and other German preparations.

As a result of the activities of this committee supported by the General Medical Board and State and county committees of the Council of National Defense legislation was enacted on June 30, 1918, as part of the Army appropriation bill, placing the Medical Department on the same footing in regard to rank as the other branches of the Army.

COMMITTEE ON NURSING.

Through the committee on nursing, with a subcommittee on public health nursing, a comprehensive survey of the nursing situation of the country was made for the benefit of the Army, Navy, Public Health Service, and American Red Cross. A campaign was inaugurated to interest young women in nursing as a career and to enlist trained nurses for duty with the fighting forces.

The committee championed the cause of securing rank and increased pay and allowances of nurses.

A plan was inaugurated whereby students might be supplied to the training schools, thus relieving the pressure of responsibility which fell of necessity upon the senior students in training. The plan, carried out through the State and local divisions of the woman's committee of the Council of National Defense, included the recruiting of candidates and their assignment to the schools which expressed a need for students.

Many other activities were inaugurated by the committee on nursing, all looking to the betterment of the nursing facilities of the country, the fullest utilization of nursing material, potential and actual, and the securing of the comfort and improving the status of nurses.

COMMITTEE ON RESEARCH.

The committee on research conducted its activities in cooperation with the National Research Council (q. v.). The committee investigated, through the laboratories available for its purposes, the vast number of medical preparations and appliances submitted to the Army and Navy for adoption by private individuals and firms. A report was made to the departments interested, with recommendations as to the adoption or rejection of the given product or appliance.

COMMITTEE ON STATE ACTIVITIES.

Upon its appointment, in April, 1917, this committee, with the assistance of the State and county committees of the Council of National Defense, concentrated its efforts primarily upon supplementing the activities previously initiated by the committee on medicine to increase the enrollment of medical men throughout the country in the Medical Reserve Corps.

The committee cooperated with the committee for civilian cooperation in combating venereal disease; it indorsed and recommended that State and county committees support the bill for increased rank for medical officers in the Army and for those engaged in various other lines of cooperative work.

COMMITTEE ON SURGERY, WITH SUBCOMMITTEES ON OPHTHALMOLOGY AND OTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

Upon the recommendation of the committee on surgery, the records of the members of the Medical Reserve Corps were classified according to professional and military qualifications and this information supplemented by confidential information as to ability for certain appointments in the military service. This information was transferred to code cards, one set remaining in the offices of the Council of National Defense and two sets being forwarded to the Surgeon General's Office, one for retention there, the other sent to General Pershing's headquarters in France.

The subcommittees on surgical specialties cooperated with the committee on surgery. An exhaustive study was made of the ear protectors in order to ascertain the best protectors for use in the service. Tests were made and a report submitted to the Surgeon General. A report was also made to the Surgeon General regarding the reconstruction of defects in hearing and speech.

In July, 1917, the two subcommittees met together as a committee on head surgery. This joint committee recommended special hospitals for the treatment of eye, ear, nose, and throat cases, and prepared plans for special hospital and dispensary buildings in cantonments. It was also recommended that specialists trained along certain lines be assigned to special duty in military hospitals. It was further recommended that for each group of several general hospitals there should be a head hospital, with one brain surgeon and four assistants; one chief ophthalmic surgeon with two assistants; one chief nose and throat surgeon and four assistants; and that four ophthalmic and six ear, nose, and throat surgeons be assigned to each division of the mobile forces. These recommendations were practically all adopted by the Surgeon General in the organization known as the Head Surgery Section of the Division of Surgery.

COMMITTEE OF WOMEN PHYSICIANS.

The committee of women physicians made a comprehensive survey of the women doctors of the country, of whom the census taken showed 5,969—5,788 being in active practice. Indorsed lists of anesthetists, laboratory workers, radiographers, and sanitarians were prepared with the assistance of experts in each line. Women physicians were recommended by this committee for service as contract surgeons in the Army, for duty with the United States Public Health Service, and to fill places in institutions and communities left vacant by the demand for men doctors in the military service.

COMMITTEE ON CHILD WELFARE.

At a preliminary conference attended by 21 representatives of various organizations, educational institutions, and governmental bureaus interested in child welfare, the following recommendations, many of which were acted upon, were made to the Council of National Defense:

1. That public-health nursing be officially recognized as war service.
2. That special effort be made to enlist college and high-school graduates for hospital training courses.
3. That volunteer aides for public-health nurses be properly trained.
4. That all communities be urged to stimulate activities pertaining to infant and child welfare.
5. That special provision be made to keep the mother and her young children together in the home.
6. That there be special supervision to day nurseries.
7. That rigid enforcement of child-labor laws be recommended.

8. That the Government be asked to assure adequate support for soldiers and their families.

9. That inquiry be made as to the need among the allied nations for maternity care and infant and child-welfare work that could properly be performed by Americans.

10. That a national committee on child welfare be organized, including representatives of interested organizations.

COMMITTEE ON REEDUCATION AND REHABILITATION.

As a result of the recommendations of this committee, a plan for the formation of a reconstruction board was presented to the Secretary of War. A conference was called in Washington on January 14, 1918, to which representatives of the departments interested were invited, for the purpose of formulating a definite plan of action. A bill providing for the vocational rehabilitation and return to civil employment of soldiers and sailors disabled in the line of duty was drafted, but was not submitted to Congress. The passage of the Smith-Sears Act on June 27, 1918, placed the supervision of the reeducation in the hands of the Bureau of War Risk Insurance and the Federal Board for Vocational Education.

VOLUNTEER MEDICAL SERVICE CORPS.

The Council of National Defense, upon the recommendation of the chairman of the Committee on Medicine, authorized and directed the committee to organize the Volunteer Medical Service Corps, to be composed of physicians ineligible for appointment in the Medical Reserve Corps on account of age (over 55), physical disability, or civil or institutional needs, and women physicians. The scope of the Volunteer Medical Service Corps was later enlarged to include every physician in the country not already in Government service. An intensive campaign for enrollment, initiated in September, 1918, brought nearly 60,000 applications for membership before the end of October, the physicians pledging themselves to place their services at the Government's disposal to perform any duty assigned to them.

The information furnished on the application blanks was transferred to code cards, making available on short notice all information in reference to each applicant. These code cards were filed in the Surgeon General's library, and the information thereon was accessible to any of the governmental departments which had occasion to make use of it.

In addition to the more conspicuous activities of the Committee on Medicine outlined above, many impromptu conferences and committee meetings were held for the consideration of specific matters on which the executive departments desired recommendations, and thousands of communications were addressed to the physicians of the country, executives of hospitals, and medical schools, nurses, dentists, and manufacturers of medical, surgical, and pharmaceutical supplies in the prosecution of the war program by the committee.

REFERENCES.

The Committee on Medicine of the Council of National Defense, by Col. Franklin Martin, M. C., chairman of the General Medical Board and member of the Advisory Committee of the Council of National Defense. On file, Historical Division, S. G. O.

CHAPTER IV.

NATIONAL RESEARCH COUNCIL.

The following account of the organization of the National Research Council and of its war activities in so far as they concerned the Medical Department of the United States Army was formulated from printed reports issued by the council.[1]

ORGANIZATION OF COUNCIL.

In April, 1916, immediately after the attack on the *Sussex*, March 24, 1916, the National Academy of Sciences voted to offer to the President of the United States its services in organizing the scientific resources of the country. This offer was accepted and the academy was requested to secure the cooperation of all agencies, governmental, educational, and industrial, in which research facilities were available. Accordingly, the National Research Council was organized by the academy, with the active cooperation of the leading national scientific and engineering societies. It comprised the chiefs of the technical bureaus of the Army and Navy, the heads of Government bureaus engaged in scientific research, a group of investigators representing educational institutions and research foundations, and another group including representatives of industrial and engineering research. Representatives of the Government were designated by the President. Approval of the plan of organization was expressed by the President in the following letter to the president of the National Academy of Sciences:

> WASHINGTON, D. C., *July 24, 1916.*
>
> Dr. WILLIAM H. WELCH,
> *President of the National Academy of Sciences, Baltimore, Md.*
>
> MY DEAR DR. WELCH: I want to tell you with what gratification I have received the preliminary report of the National Research Council, which was formed at my request under the National Academy of Sciences. The outline of work there set forth and the evidence of remarkable progress toward the accomplishment of the object of the council are indeed gratifying. May I not take this occasion to say that the departments of the Government are ready to cooperate in every way that may be required, and that the heads of the departments most immediately concerned are now, at my request, actively engaged in considering the best methods of cooperation.
>
> Representatives of Government bureaus will be appointed as members of the Research Council as the council desires.
>
> Cordially and sincerely yours,
>
> (Signed) WOODROW WILSON.

When its organization was undertaken the National Research Council was essentially without funds. The Engineering Foundation saw and appreciated the advantage of creating a body for the federation of research agencies, governmental, educational, separately endowed, and industrial. It accordingly placed its entire resources at the disposal of the Research Council, gave it the services of its secretary and provided an office for the council in the Engineering Societies Building in New York City. Special contributions from members of the Engineering Foundation enlarged the income available for this purpose, and thus the work of the National Research Council was inaugurated.

On February 28, 1917, the Council of National Defense passed a resolution expressing its recognition of the fact that the National Research Council, at the request of the President, had organized the scientific resources of the country in the interest of national defense and national welfare, and requesting the Research Council to cooperate with it in matters pertaining to scientific research for national defense. As a result of this action the chairman of the National Research Council opened offices in the Munsey Building, in the city of Washington, in March, 1917, and entered into active cooperation with the Council of National Defense, which was then established in the same building. Soon afterwards the Research Council was requested to act as the Department of Science and Research of the Council of National Defense. It acted also as the Science and Research Division of the United States Signal Corps. During the war it received a considerable part of its support from the Government. These relations continued until May 11, 1918, when the President issued the following Executive order requesting the National Academy of Sciences to perpetuate the National Research Council, defining its duties, and providing for the cooperation of the Government in its work:

EXECUTIVE ORDER ISSUED BY THE PRESIDENT OF THE UNITED STATES MAY 11, 1918.

The National Research Council was organized in 1916 at the request of the President by the National Academy of Sciences, under its Congressional charter, as a measure of national preparedness. The work accomplished by the council in organizing research and in securing cooperation of military and civilian agencies in the solution of military problems demonstrates its capacity for larger service. The National Academy of Sciences is therefore requested to perpetuate the National Research Council, the duties of which shall be as follows:

1. In general, to stimulate research in the mathematical, physical and biological sciences, and in the application of these sciences to engineering, agriculture, medicine and other useful arts, with the object of increasing knowledge, of strengthening the national defense, and of contributing in other ways to the public welfare.

2. To survey the larger possibilities of science, to formulate comprehensive projects of research, and to develop effective means of utilizing the scientific and technical resources of the country for dealing with these projects.

3. To promote cooperation in research, at home and abroad, in order to secure concentration of efforts, minimize duplication, and stimulate progress; but in all cooperative undertakings to give encouragement to individual initiative, as fundamentally important to the advancement of science.

4. To serve as a means of bringing American and foreign investigators into active cooperation with the scientific and technical services of the War and Navy Departments and with those of the civil branches of the Government.

5. To direct the attention of scientific and technical investigators to the present importance of military and industrial problems in connection with the war, and to aid in the solution of these problems by organizing specific researches.

6. To gather and collate scientific and technical information at home and abroad, in cooperation with governmental and other agencies and to render such information available to duly accredited persons.

Effective prosecution of the council's work requires the cordial collaboration of the scientific and technical branches of the Government, both military and civil. To this end representatives of the Government, upon the nomination of the National Academy of Sciences, will be designated by the President as members of the council, as heretofore, and the heads of the departments immediately concerned will continue to cooperate in every way that may be required.

(Signed) WOODROW WILSON.

THE WHITE HOUSE, *May 11, 1918.*

DIVISION OF MEDICINE AND RELATED SCIENCES.

Prior to February, 1918, the medical sciences were represented in the National Research Council by several distinct committees, representing sciences concerned with problems dealing with the cause, prevention, and treatment of disease among the military and war-industry forces, as well as those representing sciences concerned with the mental and physical fitness of individuals for military service. These committees formed the nucleus from which was organized the Division of Medicine and Related Sciences. The original committees became part of the new organization and the researches begun by them were continued under their direction.

On September 4, 1918, the chairman of the Division of Medicine was commissioned as major in the Medical Corps. There was thus established an intimate connection between the Division of Medicine of the council and the Surgeon General's Office. The original committee on Medicine and Hygiene, which was responsible for most of the early work begun by the council, ceased to function as such after February, 1918.

At the time of the organization of the division an application for funds was made to the Rockefeller Foundation. This was granted and thus the sum of $50,000 became available for work during 1918. Other gifts were received during the year. In July, 1918, the executive board of the council set aside $1,500 of its general fund for the use of the anthropological committee, to be applied to work not falling under the head of medicine or the related sciences. The total sum available for the work of the Division of Medicine for 1918 was $51,983.96.

In the development of the Division of Medicine a constant effort was made to recognize those applied sciences upon which medical problems are so fundamentally dependent that they are an actual necessity for thoroughness in medical investigation, and to include these in its organization. Investigators in these sciences were enrolled to serve on committees or subcommittees.

In the main, the purpose of the division from the beginning was to mobilize the civilian medical and related scientific workers and institutions, with their laboratories, in the United States, thus organizing a united scientific medical service for aiding in the solution of problems bearing upon and promoting the efficiency of national defense. This was accomplished by close cooperative contact with the Surgeon General of the Army, with the Surgeon General of the Navy, and with hearty support and cooperation from the many scientific investigators throughout the country.

The general plan was to follow the advice of representatives of the War, Navy, and Labor Departments in determining urgent problems, and then to find the proper workers to investigate them. The committee plan was adhered to as far as it was possible; but in many instances individuals working independently of committees gave their entire time and laboratory facilities to the work on war problems.

A brief discussion of some of the problems taken up by the different committees or by individuals working in connection with the divisions follows:

1. Much was accomplished as a result of investigations undertaken to study traumatic shock. Although these investigations by no means entirely explained the phenomenon, they gave illumination to certain clinical aspects of the problems.

2. Investigations concerned with the control of lice and their eggs, and preventive measures against infestation, resulted in the development of effective insecticides and methods of delousing.

3. A method was found for the prevention of postoperative neuromata in amputation stumps.

4. Much attention was devoted to the cultivation and collection for pharmacological study of native medicinal plants. As a result all of the digitalis required for use in the Army was grown and tested by scientists at the University of Minnesota.

5. Acetone, a necessary solvent for airplane varnishes, was almost unobtainable in the early months of the war. A simple method was worked out for its production and put into practical operation by the Government.

6. The work of the committee on industrial poisonings brought to light facts of great importance, which resulted in steps being taken to protect the health of munitions-plant workers.

7. Investigations concerning the cause and prevention of the epidemic disease "influenza" were encouraged and supported to the fullest extent.

The following list gives by title the complete roster of researches undertaken, some of which were completed before war activities ceased:

(*A*) *Under direction of the executive committee of the division:*

1. The development of protectors for the ear against effects of high explosives.[a]
2. New methods for the production of acetone.
3. General testing of new antiseptics and special study of application of same (two stations).
4. Studies of anaerobic bacteria of importance in war wounds (three stations).
5. The cultivation, collection, and pharmacological study of native medicinal plants (three stations).
6. Determination of substitutes for ambrine.
7. A study of gases as disinfectants of wounds and their use to render disease carriers innocuous.
8. Sterilization of drinking water for large bodies of troops.
9. A critical study of methods of smallpox vaccination on a large scale.
10. The value of the agglutination test after vaccinating against typhoid fever.
11. A study of rare and unusual sugars in the different strains of pneumococcus, streptococcus, and meningococcus.
12. A study of hemostatic preparation.
13. Studies of peripheral nerve injury and repair, with special reference to the prevention of amputation neuromata.
14. Studies of streptococcus infection, with special reference to empyema.
15. A study of possible substitutes for the Petri dish.
16. War (?) edema among infants.
17. Chemotherapeutic studies of experimental pneumococcus infection.
18. Tests to devise a gauze mask effective in the prevention of droplet infection.
19. A study of the cause of the so-called Spanish influenza and its possible prevention by vaccination.
20. Tests of the influence of slow intravenous injections of foreign serum in the prevention of anaphylactic shock with special reference to the Army use of antitoxic sera.
21. Chloralose as a general anesthetic in cases of shock.
22. Skin grafting as conditioned by the blood group of donor and recipient.
23. The use of "immunized" skin grafts in infected wounds.
24. Gentian violet as an antiseptic for "preserved blood" used in transfusions.
25. Methods to increase the yield of serum-antibodies in immunized animals.
26. A simplified and improved apparatus for transfusions.
27. A study of the importance of antiagglutinins for transfusion.
28. A test to disclose oxygen lack in the air of submarines and mines.

(*B*) *Committee on industrial poisonings:*

1. An experimental study of toxic effects of substances entering into the manufacture and handling of explosives (one station, seven workers).

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[a] Research conducted under the direction of the Committee on Medicine and Hygiene as constituted in the original organization of the council (Col. Victor C. Vaughan, chairman).

2. A study of early signs of intoxications among munitions workers (eight field workers in six munitions plants).

3. A study of airplane "dopes."

4. The development of protective varnishes or other skin coverings.

(*C*) *Committee on toxicity of preserved foods:*

1. Studies of canning and other methods of preserving foods.[b]

2. The related problems of botulism.

(*D*) *Committee on neurology and psychiatry:*

1. An analysis of 13,000 records of soldiers discharged from service on account of nervous and mental disturbances.

2. The early histological lesions of meningoencephalitis. (From material of the Army Medical Museum.)

(*E*) *Committee on the study of the physiology of shock:*

1. Twenty-nine studies in 10 stations.

(*F*) *Committee on control of hemorrhage* (*three stations*).

(*G*) *Committee on fatigue in industrial pursuits:*

1. An investigation of hygienic conditions in industrial establishments.

2. Studies of industrial efficiency.

3. Physiological studies of fatigue.

(*H*) *Committee on biochemistry:*

1. Studies of varieties of velvet bean and of its utilization as a food.

2. Substitutes for cane sugar.

3. The minimum vitamin requirement.

4. Substitutes for acetone in extracting and drying.

(*I*) *Anthropology committee:*

1. A study of central European races in New York City.

2. Race in relation to physical conditions and fitness for employment.

3. Anthropometric study of drafted men.

(*J*) *Psychology committee:*

1. Twenty studies by 12 different observers (or groups of observers) of military problems to which the methods of psychology are applicable.

(*K*) *Medical zoology:*

1. Studies of Giardia Microti.

2. The treatment of experimental Giardiasis.

3. An improved method of detecting ova of parasites in stools.

4. Hookworm investigations.

5. Louse investigations [b] (three stations, numerous studies).

In addition to the more specific activities enumerated above, the division rendered many miscellaneous services. Medical and premedical schools were canvassed, and their cooperation solicited in making certain changes in their curriculum to meet the necessities of war medicine and surgery and the Army laboratory service. Letters were sent to all colleges and universities, recommending the character of work best suited for their departments of bacteriology and biology to fit students for training in the Army laboratory school in the event of such students being inducted into the Army laboratory service.

Pathologists and bacteriologists were procured for the Medical Corps of the Army.

Conferences between civilian investigators, representatives of the Surgeon General's Office, and the National Research Council were arranged and the traveling expenses paid in instances where no provision was made by the Government to meet such expense. Bibliographies on medical themes were prepared and distributed to military hospitals and individuals carrying on war investigations. Through the cooperation of the Surgeon General's Library, it was possible to furnish photostatic reprints of articles from German journals published during the war and in this way to disseminate valuable information on many subjects of importance. Breeding stations for white mice were organized in different parts of the United States, so that the hospital laboratories would not be hampered in pneumonia diagnosis by a lack of these animals.

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[b] Researches conducted under the direction of the Committee on Medicine and Hygiene as constituted in the original organization of the council.

Because of the relative independence in the division of the committee on psychology and the committee on anthropology, the activities of these committees are given consideration.

COMMITTEE ON PSYCHOLOGY.

The committee on psychology of the council was appointed in April, 1917, and functioned as an independent committee until March, 1918, when it was constituted a part of the Division of Medicine and Related Sciences. The committee worked chiefly through subcommittees and military appointees in the Army and Navy. The success of its efforts was clearly shown by the increase in demands for psychological service and the rapid extension of the several lines of psychological work which were organized in the military departments.

One of the most interesting facts concerning the work of this committee during the war was the great preponderence of service over research. The services of this section of the council touched and more or less modified almost every aspect of military personnel work. The committee on classification of personnel in the Army was indirectly a result of the organization of the psychological military service by the American Psychological Association and the National Research Council.

For the Division of Military Aeronautics the committee prepared tests of mental alertness for enlisted men, providing for the measurement of characteristics of mind and behavoir which are important in the aviation service. The contributions of psychologists to the study of qualifications for flying, the fitness of fliers, and the psychological effects of high altitudes were conspicuously important.

The committee aided the Division of Psychology of the Surgeon General's Office in the administration of mental tests to enlisted men and commissioned officers in accordance with plans perfected in 1917. This work entailed the establishment of a special school for training in military psychology at Fort Oglethorpe, Ga., in which more than 400 men were trained. The rating of soldiers according to mental alertness or degree of intelligence facilitated the early and prompt elimination of men who were mentally unfit for service and the proper utilization of various grades of intelligence. Approximately 1,700,000 individuals were examined.

The establishment by the War Department of the Morale Branch of the General Staff was greatly facilitated, if not primarily due to the interest and efforts of members of the committee on psychology.

It was demonstrated that psychological methods could be devised and adapted to assist in selecting and training observers and scouts, and to this end a series of tests of mental alertness was prepared for the Division of Military Intelligence of the General Staff.

A special subcommittee was organized to assist the committee on education and special training of the War Department to àdapt instruction in psychology to the needs of the special activity training camp. Mental tests for the rating of students were prepared. Important psychological problems in military training were attacked by the committee. A study of disciplinary problems for the assistance of the Medical Department and the Morale Branch of the General Staff was undertaken, and much practical work in the interest of mental reeducation was carried on.

COMMITTEE ON ANTHROPOLOGY.

Shortly after the organization of the Division of Medicine it was recommended by the members of the original committee on anthropology that this committee as then constituted be abolished and that the anthropological work be divided into sections dealing with anthropometry in the Army, and race in relation to disease, military and civilian. It was planned to conduct investigations aimed at perfecting methods of selecting men for and arranging men in military service. A plan of procedure was formulated for making investigations to obtain information that might serve as a basis for further developments in this work. Many of the larger projects in the plan were not realized on account of unexpected and untimely adverse circumstances. However, investigations planned to be carried on by individual members of the committee were accomplished, and as a result important recommendations were made to the War Department.

The chairman of the committee on anthropometry in the Army was commissioned in the sanitary corps of the Army and placed in charge of the subsection of anthropology, section of medical records, Division of Sanitation, of the Surgeon General's Office. The subsection was organized along lines suggested by him. (See Vol. XV, Part I, Army Anthropology.)

TRANSITION FROM WAR TO PEACE ACTIVITIES.

The sudden collapse of the Central Powers, and the consequent swift transition from peace conditions, did not take the National Research Council wholly unawares.

From the time of its initiation in 1916, the council always recognized that its chief service could be best performed in times of peace, and the definition of its functions contained in the Executive order issued by President Wilson on May 11, 1918, relates particularly to this possibility. Moreover, throughout the period of the war, when all of the divisions of the council were organizing and promoting research to meet military and naval needs and to solve industrial problems of an emergency nature, the question of future activities and the provision of an organization adequate to deal with them were constantly in view. Following the signing of the armistice the council devoted itself chiefly to the utilization of the various preliminary studies made during the war period for the formulation of a definitive scheme of organization and a plan of work in keeping with the heavy demands entailed by existing conditions.

REFERENCES.

(1) National Research Council divisions and committees, war organization, established in April, 1916, at the request of the President of the United States, under the charter of the National Academy of Sciences, acting as the Department of Science and Research of the Council of National Defense, Washington, 1918; (2) War Activities of the National Research Council, by George Ellery Hale, the Engineering Foundation in the Engineering Societies Building, New York, May 28, 1918; (3) third annual report of the National Research Council, Washington, Government Printing Office, 1919; (4) Division of Medicine and Related Sciences, by Col. F. F. Russell, M. C., acting chairman, and Maj. R. G. Hussey, M. C., vice chairman, in annual report, National Academy of Sciences, 1918, 88; (5) special report, The War Activities of the Medical Division of the National Research Council for the Period Ending December 31, 1918, by Peyton Rous, vice chairman. Copies of above on file, Historical Division, S. G. O.

CHAPTER V.

THE AMERICAN MEDICAL ASSOCIATION.

The organization and facilities of the American Medical Association were placed at the command of the Medical Department of the Army even before the United States entered the World War. The following history of the war service of this body, as it concerned the Medical Department of the United States Army, is based on a special report by the editor of the *Journal of the American Medical Association.*[1]

The American Medical Association is the comprehensive organization of the medical profession of the United States. It is nonsectarian, including in its membership legally qualified practitioners of medicine, without regard to the medical school from which they graduated, who do not support or practice or claim to practice any exclusive system of medicine. This membership is composed of the more than 81,500 members of its "constituent State associations" in the 48 States and in the District of Columbia, Hawaii, the Isthmian Canal Zone, the Philippine Islands, and Porto Rico. The unit of organization is the component county medical society, of which there are over 2,000. Each member of these county branches has equal rights and responsibilities in the organization which he exercises himself or delegates to elected representatives. The county units in each State or Territory unite in the constituent State association for that jurisdiction which is governed by a house of delegates, the members of which are the representatives elected by its several component parts. In turn, these delegate bodies of constituent State branches select those who represent them in the house of delegates of the American Medical Association. its governing body.

In a word, in the American Medical Association, the United States Government had a thoroughly democratic, nonsectarian, voluntary organization of physicians, which included specialists in every branch of medicine as well as general practitioners, and in which practically two-thirds of the legally qualified active practitioners of medicine in the country held membership.

FACILITIES.

When the United States recognized that a state of war with Germany existed, the association already had tendered its organization and its facilities to the Medical Corps of the Army, of the Navy, and of the United States Public Health Service to cooperate in every way for the winning of the war.

These facilities were unique. They included information regarding the members of the medical profession which was not to be found elsewhere. This information consisted of complete records of the membership of the organization; in fact, of all licensed physicians and of other medical data compiled from various sources, including matters relating to the professional and social standing of individual physicians. Especially, at the association headquarters, there were:

(*a*) A card-index record of all medical students of the United States showing their preliminary education, the medical schools which they were attending, and the schools at which each of the years of the medical course was taken. This covered the seven years preceding the war.

(*b*) A biographic card index of physicians, giving, in addition to the student record, information concerning the school of graduation, licenses held, hospitals in which they had served as internes, the places at which they had engaged in practice, etc.

(*c*) A record of the membership of recognized special medical societies and associations, as well as the names of those who had registered in the various sections of the Scientific Assembly of the American Medical Association. These records provided information regarding the specialty in which each physician was interested or to which he limited his practice. This information was supplemented by statements from physicians themselves regarding their specialty. These data were available and were valuable in making selections of men for any special or particular service.

(*d*) A personal file containing a vast amount of personal information concerning physicians in the form of newspaper clippings and reports from various sources. It had been assembled during the 12 years preceding the war.

(*e*) A file in the propaganda for reform department of the journal containing a most complete list of quacks, irregular practitioners, cults, 'pathies, etc. This file was begun in 1907.

It will be appreciated that the association had just the data needed by the War Department to show the general character, education, and standing of the individual both as a physician and as a man, and this information was made available to and was utilized by the Surgeon General of the Army.

THE PERSONNEL DIVISION.

From the beginning of the war, the Personnel Division of the Surgeon General's Office, as a routine procedure before taking action on the applications, forwarded to the American Medical Association the names of applicants for commission in the Medical Reserve Corps, thus availing itself of the association's records. These names were forwarded almost daily, often over a hundred a day. When received, the names were card indexed and the cards distributed among specially trained clerks, who looked up the information concerning each individual. If any data were found which called in question the professional or personal character of any of these applicants, the information was transmitted to the Surgeon General. In addition to these routine investigations special investigations were, on request, made by the association officers. These were conducted by asking the president and the secretary of the county medical society (within whose jurisdiction the subject of the investigation resided) and one to four other physicians of known professional standing in that community for data concerning the physician about whom information was requested, if necessary. These requests were repeated, or additional letters were sent to others. Then when three or four responses were received at the association's headquarters they were assembled and the information forwarded to the Surgeon General's Office.

WAR WORK OF THE JOURNAL.

War was declared April 6, 1917. The journal for April 7 contained four editorials in which it was stated that war was certain. These editorials emphasized the needs of the Army and of the Navy for medical officers, and called on the medical profession to be ready to respond. The following week it published the facts relative to the number of graduates available from medical colleges, and emphasized the importance of maintaining the supply of physicians through the medical schools. In the journal for April 21, 1917, a call was issued to the profession of the United States, through the county societies, to supply the Army with medical officers. In that issue were printed 65,000 blank forms for making application for commission in the Medical Corps, as well as in the Medical Reserve Corps; and the announcement was made that the association was prepared to send pamphlets, circulars, and other information regarding the medical service of the Army and of the Navy.

In addition to other information regarding the Reserve Corps, the journal on April 28, 1917, published the first list of medical examining boards. On May 26 it again published application blanks—this time 67,000. (Incidentally, within two weeks 1,300 applications were received in the Surgeon General's Office on blanks taken from the journal.)

From this time the journal carried on a propaganda to build up the Reserve Corps and in other ways to cooperate with the Surgeon General's Office of both the Army and the Navy.

Especial mention is made of the "Medical mobilization and the war" department of the journal. This first appeared in the issue for April 14, 1917, and in each succeeding number during the period of the war. It included a great variety of medico-military articles.

One of the announcements which was of most effect in stimulating volunteers for the Medical Corps was that listing the names of physicians who accepted commissions. The first of these lists appeared in the issue for June 2, 1917, and others were published practically each week thereafter throughout the period of the war. Not infrequently the announcement of duty which accompanied the names in these lists was the first notice of his "orders," which was received by the medical volunteer.

In connection with this work there naturally was a large amount of correspondence. Since the beginning of the war the association officers answered, both by letter and by publication, thousands of questions relative to the service, thus relieving the offices of the Surgeon General of this burden. Besides the application forms (132,000) contained in the journal, the association printed and sent out about 135,000 additional forms, or a total of nearly 267,000.

DIRECT PERSONAL APPEAL TO PHYSICIANS.

In May, 1917, a proposition was submitted to the Surgeon General of the Army providing for a personal appeal to all physicians under 55 years of age. The plan was indorsed by the Surgeon General, and an officer of the Medical Corps was assigned to the association office to represent the Surgeon General and to supervise the work. The work was begun on May 28, 1917, and completed about the end of October. The association, in addition to supplying biographical data from its files and records, did the necessary printing connected with the work and furnished other facilities. However, this work was conducted ostensibly by the central division of the War Department, in Chicago, which means that the association's part in this enterprise was unknown.

The proposition as outlined and as carried out required the sending of a circular letter to every physician on the association list under 55 years of age. This letter presented the privilege of applying for a commission in the Medical Reserve Corps, and was signed by the medical officer in charge as representing the Medical Corps. A card was inclosed, with a return franked envelope, on which the recipient was asked to give certain information regarding himself; for example, his social conditions, and especially whether he would apply for a commission at that time, or later—in the latter case, when? An application blank and all the necessary information, including a list of examining boards, also was inclosed. To those physicians who did not answer, a second letter was addressed. All told, including the first letter and the "follow-up," 68,597 letters were sent out; and up to the time the medical officer was relieved from this duty returns had been received from 34,479 physicians.

In his final report to the Surgeon General the officer in charge stated that in following this work and noting the number of applicants for commissions in the Medical Reserve Corps a marked increase in these applicants reported from the different States had been noted immediately following the mailing of letters to the physicians of those States. This increase followed the mailing of both the first and second letter. The American Medical Association not only placed its files at the disposal of the Surgeon General's Office for this work, but rearranged its card system from time to time for their convenience, furnished all materials other than the franked envelopes, did all the printing, and rendered every possible assistance in a most admirable manner.

In addition to this effort to increase the Reserve Corps, the association's plant printed a large amount of material without cost to the Government. Besides the 270,000 application forms already mentioned, the following items are cited: 5,500 reply post cards for a survey of medical students relative to their relationship to the selective service law; 85,000 circular letters regarding the Medical Reserve Corps; over 120,000 lists of examining boards for Medical Reserve Corps applicants; 140,000 envelopes for use in circularizing physicians; 85,000 reply cards; over 60,000 circulars giving information concerning the Medical Reserve Corps; over 26,000 miscellaneous pamphlets and circulars relating to the mobilization of the National Army and especially of the medical profession. In a word, from the beginning of the war all the facilities of the association, including its biographical information, its printing plant—everything—were at the disposal of the Surgeon General's Offices, and every aid possible was rendered.

SURGEON GENERAL'S APPRECIATION.

As regards this point, the following letters from the Surgeon General, dated February 22, 1918, bear witness. The first is addressed to the chairman of the board of trustees; the second, to the secretary of the association:

THOMAS McDAVITT, M. D.,
Chairman Board of Trustees, American Medical Association, St. Paul, Minn.

DEAR DOCTOR McDAVITT: In answer to your letter dated February 14, 1917, I am very glad to acknowledge the great service which the American Medical Association has given, with and without solicitation, to me personally and to the Office of the Surgeon General, in the solution of the important problems of preparedness for war and of the medical and surgical care of our boys in training camp and field by the Medical Department of the Army.

Through the officers, the journal, and educational propaganda distributed by the American Medical Association, we have secured thousands of officers of the Medical Reserve Corps. The Office of the Surgeon General and the Medical Department of the Army still need your aid and support.

Permit me to thank you, and through you the other trustees and officers of the association, for the valuable help already rendered and for the acceptable offer of a continued life service.

Very truly yours,

(Signed) W. C. GORGAS,
Surgeon General, U. S. Army.

Dr. ALEX R. CRAIG,
Secretary American Medical Association, 535 North Dearborn Street, Chicago, Ill.

DEAR DOCTOR CRAIG: It gratifies and affords me pleasure to acknowledge the great services rendered by the American Medical Association, to me personally and to the Office of the Surgeon General, in organizing the Medical Department of the Army for the efficient care of our soldiers in training camp and field.

Since April, 1917, the board of trustees, the officers at the Chicago headquarters, the journal, and all the machinery of the American Medical Association have been important and distinctive factors through which many thousands of physicians have been influenced to apply for commissions in the Medical Reserve Corps; medical officers have received valuable instruction by means of special articles printed in the journal and also through literature distributed in pamphlet form from the office; and in other ways too great to enumerate here.

The spirit of service expressed by the officers and members of the American Medical Association in so many helpful ways, in the work of preparation for war and for actual surgical and medical care of our soldiers in war, evidences a patriotism and devotion to country which is a credit to the American medical profession.

I accept and thank you and through you the other officers of the association for the offer to continue the same services of the association to the Medical Department of the Army as long as may be.

Very truly yours,

(Signed) W. C. GORGAS,
Surgeon General, U. S. Army.

Under date of April 3, 1918, the Surgeon General of the Army addressed the American Medical Association submitting a memorandum of a plan for the utilization of the organization and machinery of the association, in addition to the activities of the other bodies, viz., the Medical Section of the Council of National Defense and the different sections and organizations of the American Medical Association, for the purpose of securing future increment to the Medical Reserve Corps and for keeping the numerical strength of the corps up to the requirements of the service. This plan contemplated a close cooperation between the Office of the Surgeon General and the officials of the American Medical Association through the officials of the different State and county medical societies and through the different section organizations of the American Medical Association. On receipt of this communication, the war committee convened in Chicago, April 16, 1918, and by formal action undertook the task assigned to it by the Surgeon General of the Army, and issued a statement announcing its action and declaring its confident anticipation of the hearty, active, patriotic cooperation of all physicians for the successful accomplishment of the task. Immediately a call was issued for a conference of the secretaries of the constituent State associations which was held at the headquarters of the association in Chicago on April 30, 1918.

At this conference, 38 constituent State associations were represented by their secretaries or an accredited alternate. The secretary of the Minnesota State Medical Association and chairman of the board of trustees, was elected chairman of the conference, and the entire day was devoted to the discussion of how the organized medical profession could be utilized effectively for the winning of the war, and specifically how the American Medical Association, its constituent State associations, and their component county societies could assist in enrolling the required increments for the Medical Corps of the Army and Navy. On the adjournment of the conference the secretaries of the State associations returned to the several States with the determination to coordinate the forces of the organized medical profession in their States with other agencies working with similar objects.

To determine to what extent the medical profession in various parts of the country had met its responsibility to the Government the war committee published in the journal for June 1, 1918, a survey or honor roll of the medical profession of the United States. This survey presented under each State a table which showed important facts regarding each county in the State; the area, population, total number of physicians, number of women physicians, number of physicians under commission in the Army and in the Navy. In addition to this table there were published for each State, under the counties and post offices, the names of all physicians of the State who had accepted commissions in the Medical Reserve Corps of the Army and Navy, or who were in active service in the Medical Department of the federalized National Guard. The published list did not include the names of the members of the regular Medical Corps, those who had been commissioned in the Reserve Corps but who had not accepted their commissions, or those who were serving as contract surgeons. This honor roll proved effective in stimulating applications for commissions in the Medical Reserve Corps.

SUPPORT OF MEDICAL EDUCATION.

By the time this country entered the World War the reforms among medical colleges had made such progress that for several years most of the medical graduates had benefited from improved conditions in medical schools, such as higher entrance requirements, more skilled teachers, better laboratories and laboratory equipment, better clinical material, and greatly improved methods in medical teaching.

The council on medical education of the American Medical Association, in addition to the information it had collected, rendered other important services to the Government, which are briefly enumerated as follows:

(*a*) When the selective service law was enacted it made no provision for the exemption of medical students. In the medical students' register the council had the home addresses of the majority of students enrolled during 1916–17, and was able by direct correspondence to secure reliable information showing the proportion of students who would be taken by the draft. The data collected had much to do with the provision made later, whereby drafted students were permitted to enter the enlisted reserve corps and to remain in medical colleges until they completed their medical training.

(*b*) Only such students were eligible for admission to the enlisted reserve corps as were enrolled in "well-recognized" medical colleges, which were defined as those recognized by the majority of State medical licensing boards. The only information immediately available by which it could be decided which colleges were so recognized was that published by the council on medical education of the American Medical Association in the State board statistics, based on reports signed by the various State board officers.

(*c*) The council's files of information in regard to medical colleges were also placed at the disposal of the Surgeon General, and the secretary of the council cooperated in inspecting and furnishing reports to the Surgeon General regarding a number of medical schools.

(*d*) The council's files of information in regard to standards of preliminary and medical education likewise were utilized by the Surgeon General. This information included also a list (compiled by the council) of hospitals considered in position to furnish acceptable interneships.

CONSTITUENT STATE AND COMPONENT COUNTY BRANCHES.

In addition to the foregoing activities, which were conducted in the main from the headquarters of the association, the component State medical associations and their constituent county medical societies, beside the cooperation they accorded the American Medical Association, instituted and carried on many measures within their several jurisdictions. These branches of the American Medical Association, through their cooperation with various agencies, many of which were independent of the organization of the American Medical Association, contributed to the success of measures which were undertaken with the object of mobilizing the medical profession and of placing the organization and personnel of the profession at the service of the Government for the winning of the war.

REFERENCES.

The American Medical Association's War Service, by George H. Simmons, editor, *Journal of the American Medical Association.* On file, Historical Division, S. G. O.

CHAPTER VI.

COMMISSION ON TRAINING CAMP ACTIVITIES.

The following account of the activities of the Commission on Training Camp Activities is based upon an historical sketch submitted by the Education and Recreation Branch, War Plans Division, General Staff.[1]

The Commission on Training Camp Activities was appointed by the Secretary of War within a week after the declaration of war by Congress in April, 1917. Its purpose, as defined by the Secretary, was not only to work into a comprehensive plan of recreation such private agencies as might legitimately seek to carry on their activities with the troops, but also to establish on its own initiative such recreational and educational activities as might tend to assist the morale of the troops.

The idea of a commission of this kind originated in Secretary Baker's mind as a result of an investigation made in the summer of 1916 when the American forces were mobilized on the Mexican border. Secretary Baker initiated this study primarily to determine whether our troops were being unnecessarily exposed to the demoralizing influences which are habitually associated with armies and training camps. The report on this situation, which was made to the Secretary August 10, 1916, showed that conditions surrounding our men on the border called for radical changes, and in an attempt to meet the problem by setting up competitive forces to occupy the leisure time of the soldier the idea of the Commission on Training Camp Activities was evolved.

The private agencies which it thus became one of the commission's functions to organize into a single comprehensive plan of Army recreation were the following: Young Men's Christian Association, Knights of Columbus, Jewish Welfare Board, American Library Association, Salvation Army, War Camp Community Service, and Young Women's Christian Association.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The first organization which made application to work with the troops was the Young Men's Christian Association, and on April 26, 1917, on the indorsement of the commission, the President issued the following Executive order:

> The Young Men's Christian Association has in the present emergency, as under similar circumstances in the past, tendered its services for the benefit of enlisted men in both arms of the service. This organization is prepared by experience, approved methods, and assured resources to serve especially the troops in camp and field. It seems best for the interests of the service that it shall continue as a voluntary civilian organization; however, the results obtained are so beneficial and bear such a direct relation to efficiency, inasmuch as the association provision contributes to the happiness, content, and morale of the personnel, that in order to unify the civilian betterment activities in the Army and further the work of the organization that has demonstrated its ability to render a service desired by both officers and men, official recognition is hereby given the Young Men's Christian Association as a valuable adjunct and asset to the service. Officers are enjoined to render the fullest practicable assistance and cooperation in the maintenance and extension of the association.

KNIGHTS OF COLUMBUS.

In May, 1917, an application to work with the troops was received from the Knights of Columbus, backed by many prominent Catholics in the United States. The commission felt a natural hesitancy at any unnecessary multiplication of organizations. Inasmuch, however, as active membership in the governing bodies of the Young Men's Christian Association was limited under its constitution, the commission felt that an organization representing the Catholic Church should in justice be allowed to work in the camps. The Knights of Columbus, therefore, was admitted not as a fraternity but as sustaining the same relationship to Catholicism as the Young Men's Christian Association sustained to Protestantism. In 1918, upon the formation of the National Catholic War Council, whose scope was broader than that of the Knights of Columbus, the former became the official representative of the Catholic Church, and the relations of the War Department with the Knights of Columbus and other Catholic organizations were henceforth through the National Catholic War Council.

JEWISH WELFARE BOARD.

On August 16, 1917, the Jewish Welfare Board made application for the right to represent the Jewish faith in recreational work with the troops. The same arguments that served to admit the Knights of Columbus were applicable in this case, and the board was recognized as an agency for coordinating all the Jewish work, which up to that time had been attempted by two or three Jewish bodies.

THREE BRANCHES OF FAITH REPRESENTED.

In consequence of these decisions, the three great branches of faith in America were recognized for recreational service with the troops. Although the lines of demarcation were necessarily rough, the results were fairly satisfactory to the churches. Until the National Catholic War Council was formed, the recognition of the Knights of Columbus as an agency representing the Catholic Church caused some misunderstanding with other fraternal organizations, and in January, 1918, as a result of a conference between the Secretary of War, the chairman of the Commission on Training Camp Activities, and representatives of all the large fraternal orders in the United States the following general order was promulgated by the War Department:

> Fraternal and benevolent societies of recognized and well-established character, either independently or associated together under rules prescribed by the Secretary of War, and to the extent that available ground can be had or available space in buildings already erected can be spared for the purpose, may erect, establish, or occupy buildings or such space in buildings already erected for fraternal and social work and service among the members of such societies in the camps and cantonments of the United States, after first obtaining permission from the officer in command.
>
> No secret meetings shall be allowed, nor shall any secret, fraternal, or benevolent society conduct any secret work in said camps or cantonments under the authority of this order.

WAR CAMP COMMUNITY SERVICE.

Another society interested in the welfare of the troops was the War Camp Community Service, formed by the Playground and Recreation Association of America in April, 1917, and officially recognized shortly thereafter. This agency undertook to organize social and recreational life in communities near training areas in order that soldiers on leave from camp might be supplied with wholesale companionship and entertainment.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

Shortly after the war broke out the Young Women's Christain Association applied for permission to erect hostess houses in or near the camps to serve as meeting places between the soldiers and their women friends and relatives. The application was granted, and the matter, which proceeded at first as an experiment, soon became a nation-wide enterprise.

AMERICAN LIBRARY ASSOCIATION.

In June, 1917, the American Library Association was asked by the commission to provide library facilities in the 32 cantonments and National Guard training camps which were soon to be opened. This involved not only supplying the books and personnel necessary, but the erection of suitable library buildings in the camps. Later on the Library Association undertook to supply books and other reading matter to soldiers abroad, no matter where their station.

SALVATION ARMY.

The Salvation Army was recognized by the American Expeditionary Forces before it received recognition by the Commission on Training Camp Activities. The organization had carried on its activities with the British Expeditionary Forces in France and in England, and its work in the American Army.

INDEPENDENT ACTIVITIES OF THE COMMISSION.

In addition to correlating the work of the various agencies, the commission initiated certain activities of its own. These were carried on by different divisions of the commission, into which the latter was organized for administrative purposes. This is to say, there was a division to provide athletics for the camps, one to initiate mass singing and other musical activities, one for dramatic activities, a division in charge of the social hygiene program, and one to supervise law enforcement.

In 1919 the activities which had been under the direction of the Commission on Training Camp Activities were transferred to the War Plans Division, General Staff, by General Orders, No. 109, War Department:

> By direction of the Secretary of War, the direct control and supervision of all matters pertaining to the education and recreation of the soldier is vested in the director, War Plans Division, General Staff, who will have associated with him a board of civilian educators to advise him on the development of educational policies within the Army. He will provide for a proper system of inspection to insure uniformity in this training.
>
> Commanding officers will assume full responsibility for the contentment and well-being of the soldiers, and be prepared to maintain, as far as practicable, the work now being carried on by the several civilian welfare agencies within their commands.
>
> All functions of the Commission on Training Camp Activities and the Committee on Education and Special Training are hereby transferred to the War Plans Division, General Staff.

At the same time the War Department addressed to each of the welfare organizations a letter announcing this future policy and expressing profound appreciation for the services rendered by them during the war.

Two organizations, namely, the Y. M. C. A. and the Knights of Columbus, were asked to continue their work with the troops in France, Germany, Siberia, the Panama Canal Zone, the Hawaiian Islands, the Philippine Islands, and Alaska "for a further period of three or four months, or until such a time as the Army is in a position to undertake the responsibility."

The War Plans Division of the General Staff established within itself an Education and Recreation Branch, having three sections: (1) General and vocational education: (2) camp activities, including service clubs, post exchanges, athletics, music, entertainment and theaters, libraries, and community cooperation; (3) moral training.

REFERENCES.

History of the Commission on Training Camp Activities, April, 1917, to September, 1919, prepared by the War Plans Division, General Staff. Copy on file, Historical Division, S. G. O.

APPENDIX

In Memoriam.[a]

OFFICERS OF THE MEDICAL DEPARTMENT KILLED IN ACTION.

Ambelang, Lisle P.	First lieutenant, Dental Corps. August 6, 1918. Killed while serving with the 125th Infantry, American Expeditionary Forces, France.
Arnett, John D.	First lieutenant, Medical Corps. April 16, 1918. Killed while serving with the Glasgow Highlanders, British Expeditionary Forces, France.
Baldwin, Joseph F.	First lieutenant, Medical Corps. August 7, 1918. Killed while serving with the 11th Royal Fusilliers, British Expeditionary Forces, France.
Barber, Timothy L.	Captain, Medical Corps. October 10, 1918. Killed while serving with the 313th Infantry, American Expeditionary Forces, France.
Beasley, Shadworth O.	Major, Medical Corps. October 14, 1918. Killed while serving with the 76th Field Artillery, American Expeditionary Forces, France.
Brown, Arthur S.	First lieutenant, Medical Corps. October 9, 1918. Killed while serving with the 143d Infantry, American Expeditionary Forces, France.
Brown, Presley R.	First lieutenant, Medical Corps. July 1, 1918. Killed while serving with the 9th Infantry, American Expeditionary Forces, France.
Bull, William S.	First lieutenant, Medical Corps. October 11, 1918. Killed while serving with the 114th Infantry, American Expeditionary Forces, France.
Cassell, Lee S.	First lieutenant, Medical Corps. November 4, 1918. Killed while serving with the British Expeditionary Forces, France.
Clair, Frederick D.	Captain, Medical Corps. May 10, 1918. Killed while serving with the 16th Army Brigade, British Expeditionary Forces, France.
Cox, James C.	Second lieutenant, Veterinary Corps. October 23, 1918. Killed while serving with the 3d Ammunition Train, American Expeditionary Forces, France.
Craig, Wm. F.	First lieutenant, Medical Corps. September 26, 1918. Killed while serving with the 315th Infantry, American Expeditionary Forces, France.
Daniels, Hoddie W.	Captain, Medical Corps. July 10, 1918. Killed while serving with the 38th Infantry, American Expeditionary Forces, France.
Desmond, Walter P.	First lieutenant, Dental Corps. July 19, 1918. Killed while serving with the 38th Infantry, American Expeditionary Forces, France.
Dudenhoefer, Joseph E.	Captain, Medical Corps. September 17, 1918. Killed while serving with the 309th Infantry, American Expeditionary Forces, France.
Fair, Wilford A.	First lieutenant, Medical Corps. October 6, 1918. Killed while serving with the 20th Engineers, American Expeditionary Forces, France.

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[a] This list of officers who died during the war up to September 1, 1919, was prepared from the records of the Surgeon General's Office, and checked by the records of The Adjutant General's Office.

Faulk, Leonidas B	First lieutenant, Medical Corps. March 24, 1918. Killed while serving with the British Expeditionary Forces, France.
Finkleberg, Morris	First lieutenant, Medical Corps. September 15, 1918. Killed while serving with the 360th Infantry, American Expeditionary Forces, France.
Fitzsimons, Wm. T	First lieutenant, Medical Corps. September 4, 1917. Killed while serving with Base Hospital No. 5, British Expeditionary Forces, France.
Gaston, Perry S	First lieutenant, Medical Corps. April 7, 1918. Killed while serving with the British Expeditionary Forces, France.
Gochnaur, Orlando M	First lieutenant, Medical Corps. November 6, 1917. Killed while serving with the 73d Field Ambulance, British Expeditionary Forces, France.
Hartwig, Gerhard F	First lieutenant, Medical Corps. October 31, 1918. Killed while serving with the 363d Infantry, American Expeditionary Forces, France.
Herrington, Wm. G	First lieutenant, Medical Corps. June 6, 1918. Killed while serving with the 23d Infantry, American Expeditionary Forces, France.
Howe, Geo. P	First lieutenant, Medical Corps. September 28, 1917. Killed while serving with the 37th Division, British Expeditionary Forces, France.
Hudson, Wm. B	Captain, Medical Corps. August 1, 1918. Killed while serving with the 16th Infantry, American Expeditionary Forces, France.
Jett, Richard L	Captain, Medical Corps. April 13, 1918. Killed while serving with the 21st Fusilliers, British Expeditionary Forces, France.
King, Emil	First lieutenant, Medical Corps. September 12, 1918. Killed while serving with the 310th Field Hospital, American Expeditionary Forces, France.
Leonard, Jerome McK	First lieutenant, Medical Corps. November 8, 1918. Killed while serving with the 302d Sanitary Train, American Expeditionary Forces, France.
Lewis, Samuel	First lieutenant, Medical Corps. August 28, 1918. Killed while serving with Base Hospital No. 12, British Expeditionary Forces, France.
Linch, Ballard C	First lieutenant, Medical Corps. September 29, 1918. Killed while serving with the 314th Infantry, American Expeditionary Forces, France.
Long, Charles R	First lieutenant, Medical Corps. April 20, 1918. Killed while serving with the British Expeditionary Forces, France.
McQuillan, James A	Captain, Medical Corps. October 23, 1918. Killed while serving with the 99th Field Ambulance, British Expeditionary Forces, France.
Morgan, Harold S	First lieutenant, Medical Corps. April 12, 1918. Killed while serving with Base Hospital No. 2, British Expeditionary Forces, France.
Morrissey, Howard M	First lieutenant, Dental Corps. November 1, 1918. Killed while serving with the 360th Infantry, American Expeditionary Forces, France.
Murdock, Robert H	First lieutenant, Medical Corps. September 26, 1918. Killed while serving with the 47th Infantry, American Expeditionary Forces, France.
Oglesby, Knowles G	First lieutenant, Medical Corps. August 21, 1918. Killed while serving with the 150th Royal Navy Field Ambulance, British Expeditionary Forces, France.
Parsons, Joseph H	First lieutenant, Dental Corps. October 4, 1918. Killed while serving with the 313th Machine Gun Battalion, American Expeditionary Forces, France.

Post, Dana C.	First lieutenant, Medical Corps. August 21, 1918. Killed while serving with the 125th Infantry, American Expeditionary Forces, France.
Reed, Stephen J. H.	Captain, Medical Corps. October 3, 1918. Killed while serving with the 130th Field Hospital, American Expeditionary Forces, France.
Renner, John W.	First lieutenant, Medical Corps. November 4, 1918. Killed while serving with the 147th Infantry, American Expeditionary Forces, France.
Saunders, Alonzo W.	First lieutenant, Medical Corps. October 8, 1918. Killed while serving with the 319th Ambulance Company, American Expeditionary Forces, France.
Sherwood, Robert A.	First lieutenant, Medical Corps. September 19, 1918. Killed while serving with the 310th Infantry, American Expeditionary Forces, France.
Skilling, John G.	First lieutenant, Medical Corps. November 6, 1918. Killed while serving with the 26th Infantry, American Expeditionary Forces, France.
Steen, John H.	First lieutenant, Medical Corps. August 6, 1918. Killed while serving with the 125th Infantry, American Expeditionary Forces, France.
Stone, Leslie A.	First lieutenant, Dental Corps. October 17, 1918. Killed while serving with the 103d Infantry, American Expeditionary Forces, France.
Summers, Davis K.	First Lieutenant, Medical Corps. March 1, 1918. Killed while serving with the 18th Infantry, American Expeditionary Forces, France.
Webster, Harrison B.	Major, Medical Corps. October 7, 1918. Killed while serving with the 47th Infantry, American Expeditionary Forces, France.
Wheeler, David E.	First Lieutenant, Medical Corps. July 19, 1918. Killed while serving with the 16th Infantry, American Expeditionary Forces, France.
White, Winfield M.	First lieutenant, Medical Corps. November 3, 1918. Killed while serving with the Medical Replacement Unit No. American Expeditionary Forces, France.

OFFICERS OF THE MEDICAL DEPARTMENT WHO DIED OF WOUNDS.

Bass, Urbane F.	First lieutenant, Medical Corps. October 7, 1918. Wounded while serving with the American Expeditionary Forces, France.
Beal, Howard W.	Major, Medical Corps. July 20, 1918. Wounded while serving with the 6th Field Artillery, American Expeditionary Forces, France.
Boutwell, Lloyd R.	First lieutenant, Medical Corps. October 14, 1918. Wounded while serving with the 314th Engineers, American Expeditionary Forces, France.
Bull, Wm. S.	First lieutenant, Medical Corps. October 11, 1918. Wounded while serving with the 114th Infantry, American Expeditionary Forces, France.
Burrell, Guthrie O.	First lieutenant, Medical Corps. September 26, 1918. Wounded while serving with the 148th Infantry, American Expeditionary Forces, France.
Carter, Grover	First lieutenant, Medical Corps. October 16, 1918. Wounded while serving with the 121st Brigade, British Expeditionary Forces, France.
Davis, Reese	First lieutenant, Medical Corps. September 30, 1918. Wounded while serving with the 4th Field Ambulance Company, British Expeditionary Forces, France.

Ellis, Jay G., jr.	Captain, Medical Corps. July 2, 1918. Wounded while serving with Ambulance Company No. 27, American Expeditionary Forces, France.
Faulds, Winfield S.	First Lieutenant, Medical Corps. October 10, 1918.
Frazier, Francis V.	First lieutenant, Medical Corps. March 24, 1918. Wounded while serving with the 169th Army Brigade, British Expeditionary Forces, France.
Gibson, Burgess A.	First lieutenant, Medical Corps. November 1, 1918. Wounded while serving with Mobile Hospital No. 6, American Expeditionary Forces, France.
Glascock, Alfred	Captain, Medical Corps. October 8, 1918. Wounded while serving with the American Expeditionary Forces, France.
Goss, Paul L.	First lieutenant, Medical Corps. October 6, 1918. Wounded while serving with the 1st Battalion, American Expeditionary Forces, France.
Hanson, Dave T.	Captain, Medical Corps. October 8, 1918. Wounded while serving with the 142d Infantry, American Expeditionary Forces, France.
Hites, Edward E.	Second lieutenant, Veterinary Corps. September 28, 1918. Wounded while in the American Expeditionary Forces, France.
Humphreys, Ralph W.	Captain, Medical Corps. November 1, 1918. Wounded while serving with the 16th Ambulance Train, British Expeditionary Forces, France.
Hunt, Harry F.	Second lieutenant, Veterinary Corps. February 6, 1919. Wounded while serving with the American Expeditionary Forces, France.
Joyce, Whitney H.	First lieutenant, Medical Corps. May 17, 1918. Wounded while serving with the British Expeditionary Forces, France.
Klingen, Oscar M.	First lieutenant, Medical Corps. October 16, 1918. Wounded while serving with Base Hospital No. 26, American Expeditionary Forces, France.
Lieser, Wm. A.	First lieutenant, Medical Corps. October 5, 1918. Wounded while serving with the 308th Infantry, American Expeditionary Forces, France.
McFarland, James	First lieutenant, Medical Corps. October 24, 1918. Wounded while serving with the 113th Infantry, American Expeditionary Forces, France.
McKibbin, James M.	Captain, Medical Corps. October 24, 1918. Wounded while serving with the 306th Machine Gun Battalion, American Expeditionary Forces, France.
McQuaid, Arthur F	First lieutenant, Medical Corps. October 13, 1918. Wounded while serving with the 49th Division, British Expeditionary Forces, France.
Marowitz, Max	First lieutenant, Medical Corps. September 1, 1918. Wounded while serving with the 47th Division, British Expeditionary Forces, France.
Mead, Theodore F.	Captain, Medical Corps. October 30, 1918. Wounded while serving with the 104th Field Artillery, American Expeditionary Forces, France.
Mooney, Edward L.	First lieutenant, Medical Corps. March 26, 1918. Wounded while serving with the 106th Field Ambulance, British Expeditionary Forces, France.
Olstein, Matthew F.	First lieutenant, Medical Corps. October 1, 1918. Wounded while serving with the 314th Infantry, American Expeditionary Forces, France.
Pinkus, Irving J.	First lieutenant, Medical Corps. August 30, 1918. Wounded while serving with the British Expeditionary Forces, France.
Powers, Ralph E.	First lieutenant, Medical Corps. January 22, 1919. Wounded while serving with the 339th Infantry, American Expeditionary Forces, Russia.
Ransom, Glen D.	Captain, Medical Corps. September 16, 1918. Wounded while serving with the British Expeditionary Forces, France.

Ray, John....................Captain, Medical Corps. October 5, 1918. Wounded while serving with the 119th Infantry, American Expeditionary Forces, France.

Robertson, Charles A.........First lieutenant, Medical Corps. November 14, 1918. Wounded while serving with the 80th Division, American Expeditionary Forces, France.

Rosenwald, John P...........First lieutenant, Medical Corps. May 6, 1918. Wounded while serving with the 151st Field Artillery, American Expeditionary Forces, France.

Ryman, Herbert D..........Captain, Medical Corps. August 17, 1918. Wounded while serving with the 107th Field Artillery, American Expeditionary Forces, France.

Sage, Abner P. H...........First lieutenant, Medical Corps. May 30, 1918. Wounded while serving with the British Expeditionary Forces, France.

Shedd, Clyde E.............First lieutenant, Medical Corps. October 16, 1918. Wounded while serving with the 327th Infantry, American Expeditionary Forces, France.

Tinsman, Joseph A..........First lieutenant, Sanitary Corps. November 14, 1918. Wounded while serving with the 26th Engineers, American Expeditionary Forces, France.

Vermilyea, Sidney C.........First lieutenant, Medical Corps. November 2, 1918. Wounded while serving with the American Expeditionary Forces, France.

OFFICERS OF THE MEDICAL DEPARTMENT WHO DIED OF DISEASE, ACCIDENT, OR OTHER CAUSES.

Abshire, David............Captain, Medical Corps. October 5, 1918. Camp Stuart, Va.

Ackley, Earl R.............First lieutenant, Medical Corps. October 13, 1918. Fort Oglethorpe, Ga.

Adams, Henry G...........First lieutenant, Medical Corps. September 23, 1918. American Expeditionary Forces, France.

Adams, Thomas R...........First lieutenant, Medical Corps. October 13, 1918. Camp Lee, Va.

Anderson, Lionel A..........Captain, Medical Corps. February 18, 1919. American Expeditionary Forces, France.

Andres, John H.............First lieutenant, Medical Corps. October 5, 1917. Camp Cody, N. Mex.

Atkins, James D.............First lieutenant, Medical Corps. October 9, 1918. Camp Lee, Va.

Augenstein, Melvin M.......Captain, Dental Corps. October 16, 1918. American Expeditionary Forces, France.

Baker, Samuel C............Captain, Medical Corps. March 20, 1918. Sumter, S. C.

Bailey, Dexter E............First lieutenant, Sanitary Corps. November 2, 1918. Camp Bowie, Tex.

Baldwin, Ashton M..........First lieutenant, Medical Corps. April 16, 1919. Aurora, Colo.

Ballachey, Frederic A.......First lieutenant, Dental Corps. September 26, 1918. Camp Dix, N. J.

Ballow, Joseph R...........First lieutenant, Veterinary Corps. February 20, 1919. American Expeditionary Forces, Germany.

Barlow, Harold C...........Second lieutenant, Sanitary Corps. October 18, 1918. Camp Taylor, Ky.

Baris, Alexander D.........First lieutenant, Dental Corps. February 28, 1919. American Expeditionary Forces, France.

Barnhill, Please D..........Captain, Medical Corps. October 31, 1918. Fort Ringold, Tex.

Bartling, Dietrich L........First lieutenant, Medical Corps. October 20, 1918. Fort Sill, Okla.

Bates, Floyd S.............First lieutenant, Medical Corps. August 6, 1917. Fort Riley, Kans.

Bayliss, Major Wm.........Captain, Sanitary Corps. February 15, 1919. Washington, D. C.

Beach, Mark................First lieutenant, Medical Corps. February 15, 1918. Fort Sill, Okla.

Beaton, James J.	First lieutenant, Medical Corps. February 8, 1919. Camp Merritt, N. J.
Bedinger, John van D.	Captain, Medical Corps. Oct. 20, 1918. American Expeditionary Forces, France.
Bell, John H.	Captain, Medical Corps. March 9, 1918. Fort Sill, Okla.
Bell, Joseph F.	First lieutenant, Medical Corps. October 14, 1918. Fort Riley, Kans.
Bellinger, Ivan E.	First lieutenant, Medical Corps. January 17, 1918. Fort Riley, Kans.
Betowski, Paul E.	Captain, Medical Corps. July 2, 1918. American Expeditionary Forces, France.
Beyerlein, Arthur L.	First lieutenant, Medical Corps. October 10, 1918. Washington, D. C.
Billingslea, Charles C.	Lieutenant colonel, Medical Corps. August 16, 1917. Annapolis Junction, Md.
Birdsong, Horace R.	First lieutenant, Dental Corps, May 10, 1918. Camp Mills, N. Y.
Bising, Albert G.	Major, Medical Corps. October 21, 1918. American Expeditionary Forces, France.
Bissell, Joseph B.	Major, Medical Corps. December 1, 1918. New York, N. Y.
Blanchard, K. L.	First lieutenant, Ambulance Corps. December 15, 1918. American Expeditionary Forces, France.
Blender, Henry	First lieutenant, Medical Corps. October 17, 1918. Camp Greenleaf, Ga.
Bliss, Vance W.	First lieutenant, Dental Corps. October 12, 1918. American Expeditionary Forces, France.
Boazman, Francis E.	First lieutenant, Dental Corps. October 19, 1918. Camp Sherman, Ohio.
Boisseau, Charles H.	First lieutenant, Dental Corps. October 12, 1918. Camp Upton, Long Island, N. Y.
Booth, James L.	Captain, Medical Corps. September 26, 1918. American Expeditionary Forces, France.
Bourke, James	Major, Medical Corps. June 17, 1917. Annapolis Junction, Md.
Bourke, John F.	First lieutenant, Medical Corps. July 28, 1919. Souther Field, Ga.
Bowker, Charles H.	Captain, Medical Corps. September 9, 1917. Roosevelt Dam, Ariz.
Boyd, Samuel H.	First lieutenant, Medical Corps. December 24, 1918. Camp Merritt, N. J.
Boyes, Joseph H.	First lieutenant, Medical Corps. October 23, 1918. Hebron, Nebr.
Bradley, Burton P.	First lieutenant, Medical Corps. October 16, 1918. American Expeditionary Forces, France.
Bradley, Clarence D.	Captain, Medical Corps. February 1, 1918. Camp Greene, N. C.
Brand, Geo. J.	First lieutenant, Medical Corps. February 11, 1918. Camp Doniphan, Okla.
Breitling, Carl A.	First lieutenant, Medical Corps. November 5, 1918. Chattanooga, Tenn.
Brittin, Oliver P.	Captain, Medical Corps. July 2, 1919. Springfield, Ill.
Brooks, John T.	Captain, Medical Corps. May 23, 1919. American Expeditionary Forces, France.
Brown, Carl L.	First lieutenant, Medical Corps. October 9, 1918. Bennington, Kans.
Brown, Paul D.	First lieutenant, Sanitary Corps. January 8, 1919. Camp Stuart, Va.
Browne, Hugh Z.	First lieutenant, Medical Corps. October 22, 1918. Fort Oglethorpe, Ga.
Brumbaugh, Samuel O.	Captain, Medical Corps. September 6, 1918. Baltimore, Md.
Bunch, Henry E.	Major, Medical Corps. April 27, 1919. Camp Merritt, N. J.
Burgess, True S.	First lieutenant, Medical Corps. October 20, 1918. Russellville, Ark.
Burkhalter, Francis M.	First lieutenant, Medical Corps. October 8, 1918. American Expeditionary Forces, France.

Burnett, Theodore L.	Captain, Medical Corps. November 5, 1918. Camp Shelby, Miss.
Burrows, Lorenzo, jr.	Captain, Medical Corps. September 17, 1918. American Expeditionary Forces, France.
Butler, Charles F.	First lieutenant, Medical Corps. June 4, 1918. Brighton, Mass.
Caldwell, Eugene W.	Major, Medical Corps. June 20, 1918. New York, N. Y.
Caplinger, Theophilus P.	Major, Medical Corps. January 1, 1919. Camp Logan, Tex.
Carlson, Benjamin W.	Captain, Medical Corps. November 21, 1918. San Antonio, Tex.
Caro, Heiman	Captain, Medical Corps. January 22, 1919. American Expeditionary Forces, France.
Carow, Frederick G.	First lieutenant, Medical Corps. October 16, 1918. Camp Upton, Long Island, N. Y.
Carroll, Ellsworth J.	First lieutenant, Medical Corps. February 13, 1918. Camp McArthur, Tex.
Carroll, Thomas B.	Second lieutenant, Veterinary Corps. November 10, 1918. Camp Bragg, N. C.
Chapman, Wm. H.	Captain, Medical Corps. September 26, 1918. Brooklyn, N. Y.
Churchill, Thomas W.	First lieutenant, Veterinary Corps. July 23, 1918. West Point, N.Y.
Clark, Elmer B.	Second lieutenant, Sanitary Corps. May 17, 1919. Rahway, N. J.
Clark, Millard C.	First lieutenant, Medical Corps. September 30, 1918. Camp Gordon, Ga.
Clements, Paul	Captain, Medical Corps. June 29, 1918. Manila, P. I.
Coble, Paul B.	Major, Medical Corps. May 11, 1919. American Expeditionary Forces, France.
Cocke, Paul L.	Captain, Medical Corps. July 21, 1918. American Expeditionary Forces, France.
Cogdill, Benjamin J.	First lieutenant, Medical Corps. October 3, 1918. Camp Lee, Va.
Cole, Clarence L.	Lieutenant Colonel, Medical Corps. August 8, 1918. Fort Sam Houston, Tex.
Conrad, George W. H.	First lieutenant, Medical Corps. October 29, 1917. Fort Riley, Kans.
Coombs, Wyvern A.	First lieutenant, Medical Corps. April 30, 1918. Fort Oglethorpe, Ga.
Corson, John G.	First lieutenant, Medical Corps. October 23, 1918. Fort Bayard, N. Mex.
Costen, Fred C.	First lieutenant, Medical Corps. March 21, 1919. American Expetionary Forces, Germany.
Cowper, Wm. L.	First lieutenant, Medical Corps. March 9, 1919. American Expeditionary Forces, France.
Cox, Boaz B.	First lieutenant Medical Corps. May 19, 1919. American Expeditionary Forces, France.
Craig, Harold M.	Captain, Medical Corps. October 8, 1918. Fort Stevens, Oreg.
Cropp, Charles F.	First lieutenant, Medical Corps. January 6, 1919. Salem, Oreg.
Crummey, Elias C.	Captain, Medical Corps. Nov. 26, 1918. Camp Wadsworth, S. C.
Culver, Carl C.	First lieutenant, Medical Corps. October 8, 1918. Camp Grant, Ill.
Cunningham, Malcolm	First lieutenant, Medical Corps. October 10, 1918. Astoria, Oreg.
Dattelbaum, Harry A.	First lieutenant, Sanitary Corps. April 5, 1918. Brooklyn, N. Y.
Davidson, Wm. J.	First lieutenant, Medical Corps. January 21, 1919. New York, N. Y.
Davis, Raymond N.	First lieutenant, Medical Corps. September 19, 1918. American Expeditionary Forces, France.
Dean, Claud	First lieutenant, Medical Corps. October 20, 1918. Fort Oglethorpe, Ga.
De Lanney, Emil L.	Major, Medical Corps. December 24, 1918. Fort Des Moines, Iowa.
Dennett, Paul C.	First lieutenant, Medical Corps. October 28, 1918. American Expeditionary Forces, France.
Denny, Malcolm J.	Captain, Medical Corps. March 27, 1918. Camp Lewis, Wash.
Derr, Ira M.	First lieutenant, Medical Corps. November 6, 1918. Camp Wadsworth, S. C.

Deshon, Geo. D	Lieutenant colonel, Medical Corps. June 24, 1917. Boston, Mass.
De Vane, James G	First lieutenant, Medical Corps. November 2, 1918. Adel, Ga.
Dobbs, Clarence H	First lieutenant, Medical Corps. October 6, 1918. Camp Greene, N. C.
Doerr, Charles E	Lieutenant colonel, Medical Corps. October 3, 1918. Camp Humphreys, Va.
Dornbusch, Franklin H	First lieutenant, Medical Corps. September 3, 1918. Camp Gordon, Ga.
Earley, Joseph R	First lieutenant, Dental Corps. October 8, 1918. Camp Stuart, Va.
Eckels, Lauren S	Major, Medical Corps. March 27, 1918. New York, N. Y.
Effner, Ralph G	First lieutenant, Veterinary Corps. February 4, 1919. Camp McClellan, Ala.
Emery, Wm. E	First lieutenant, Medical Corps. June 10, 1918. Fort Oglethorpe, Ga.
Englerth, Bennie L	First lieutenant, Medical Corps. December 16, 1918. American Expeditionary Forces, France.
Evans, Arthur M	First lieutenant, Medical Corps. October 5, 1918. American Expeditionary Forces, France.
Fanton, Clark D	First lieutenant, Medical Corps. October 4, 1918. Camp Meade, Md.
Farr, Geo. E	Captain, Medical Corps. October 30, 1918. Brownsville, Tex.
Ferguson, Thomas R	First lieutenant, Medical Corps. October 2, 1918. British Expeditionary Forces, France.
Ferguson, Wm. J	First lieutenant, Medical Corps. October 12, 1918. Quindaro, Kans.
Ferrell, Hubert	First lieutenant, Medical Corps. February 24, 1918. Fort Clark, Tex.
Fickes, Ralph H	First lieutenant, Dental Corps. October 18, 1918. Fort Oglethorpe, Ga.
Field, Knight W	First lieutenant, Medical Corps. October 7, 1918. American Expeditionary Forces, France.
Fischer, John R	First lieutenant, Medical Corps. October 31, 1918. Fort Bayard, N. Mex.
Flannagan, Lawrence E	Captain, Medical Corps., November 6, 1918. Charlottesville, Va.
Fleming, Lionel G	First lieutenant, Dental Corps. October 4, 1918. Camp Lee, Va.
Fletcher, Francis D	Captain, Medical Corps. July 30, 1918. American Expeditionary Forces, England.
Fletcher, Roland E	First lieutenant, Dental Corps, December 21, 1918. Fort Oglethorpe, Ga.
Foley, Mathew J	First lieutenant Medical Corps. October 10, 1918. Camp Meade, Md.
Foster, Robert E	First lieutenant, Medical Corps. January 11, 1918. Camp Gordon, Ga.
Fox, Walter H	Captain, Medical Corps, February 22, 1919. American Expeditionary Forces, Serbia.
Francis, Charles H	First lieutenant, Medical Corps. September 29, 1918. Fort Winfield Scott, Calif.
Franklin, Spencer	Captain, Medical Corps. July 21, 1918. Waynesville, N. C.
Fraser, Alexander G	Captain, Veterinary Corps. May 23, 1919. Fort McHenry, Md.
Friday, Gale	First lieutenant, Dental Corps. November 14, 1918. Camp Sheridan, Ala.
Furlong, Joseph A	First lieutenant, Medical Corps. October 10, 1918. American Expeditionary Forces, France.
Gallagher, Charles H	Captain, Medical Corps. August 22, 1918. American Expeditionary Forces, France.
Gardner, Frank H	First lieutenant, Medical Corps, February 24, 1918. New York City, N. Y.
Gates, Wm. C	Captain, Medical Corps. February 17, 1919. American Expeditionary Forces, France.

Gayden, Hugh D	First lieutenant Medical Corps. December 13, 1918. American Expeditionary Forces, France.
Gibson, Robert M	Captain, Sanitary Corps. October 3, 1918. American Expeditionary Forces, France.
Gill, Harry D	Major, Veterinary Corps. October 3, 1918. Waynesville, N. C.
Gillmore, Robert T	Captain, Medical Corps. January 20, 1918. Fort Oglethorpe, Ga.
Glass, Roy S	First lieutenant, Dental Corps. October 19, 1918. Frackville, Pa.
Gleason, Wm. T	First lieutenant, Medical Corps. March 7, 1918. Salt Lake City, Utah.
Goins, Geo. W	First lieutenant Medical Corps. March 14, 1919. Jefferson Barracks, Mo.
Goldthwaite, Robert	Captain, Medical Corps. September 20, 1918. American Expeditionary Forces, France.
Goodglick, Samuel	First lieutenant, Medical Corps. November 8, 1918. North Bend, Ohio.
Goodwin, Edward L	First lieutenant, Medical Corps. October 10, 1918. Fort Niagara, N. Y.
Graham, James M	First lieutenant, Medical Corps. April 4, 1919. Aurora, Calif.
Grandage, Walter	Captain, Dental Corps. October 7, 1918. Camp Devens, Mass.
Green, Augustin de Y	Captain, Medical Corps. November 25, 1917. Camp Lewis, Wash.
Greenough, Azriel	Second lieutenant, Veterinary Corps. October 15, 1918. Fort Oglethorpe, Ga.
Griffith, Lewis T	Lieutenant colonel, Medical Corps. April 18, 1919. American Expeditionary Forces, France.
Griswold, James B	First lieutenant, Medical Corps. October 25, 1917. Morristown, N. J.
Grubb, Albert L	Captain, Medical Corps. April 5, 1918. At sea.
Guilfoyle, Wm. F., jr	Captain, Medical Corps. September 2, 1918. American Expeditionary Forces, France.
Gymer, Alfred K	First lieutenant, Medical Corps. August 27, 1918. Camp Sherman, Ohio.
Hadra, Frederick	Major, Medical Corps. December 28, 1917. Fort Shafter, Hawaii.
Hall, Wm. L	First lieutenant, Medical Corps. February 10, 1919. American Expeditionary Forces, France.
Hanbridge, Francis F	First lieutenant, Medical Corps. January 31, 1918. American Expeditionary Forces, France.
Hand, Jesse D	First lieutenant, Medical Corps. November 24, 1918. American Expeditionary Forces, France.
Hannah, Clark B	First lieutenant, Dental Corps. October 18, 1918. Camp Fremont, Calif.
Haralson, Guy C	First lieutenant, Medical Corps. October 24, 1918. Fort McPherson, Ga.
Harwood, Wm. E	Captain, Medical Corps. February 4, 1918. American Expeditionary Forces, France.
Haughey, Glenn E	First lieutenant, Medical Corps. October 24, 1918. Fort Oglethorpe, Ga.
Hawes, Stephen J	First lieutenant, Medical Corps. October 20, 1918. American Expeditionary Forces, France.
Hawley, Franklin M	First lieutenant, Medical Corps. October 4, 1918. American Expeditionary Forces, France.
Hearn, Robert E	First lieutenant, Medical Corps. October 18, 1918. Camp Stanley, Tex.
Hedrick, Oscar E	First lieutenant, Medical Corps. April 18, 1919. Museville, Va.
Henderson, Frederick A	First lieutenant, Medical Corps. January 13, 1919. Fort Bayard, N. Mex.
Henderson, Frederick N	First lieutenant, Medical Corps. April 7, 1918. Camp Greenleaf, Ga.
Henderson, Geo. E	Captain, Medical Corps. February 12, 1919. American Expeditionary Forces, France.

Henry, Edward G.	First lieutenant, Medical Corps. November 7, 1918. American Expeditionary Forces, France.
Henshaw, Winfred E.	First lieutenant, Dental Corps. September 28, 1918. Chicago, Ill.
Hess, John D.	Captain, Medical Corps. October 9, 1918. Fort Bliss, Tex.
Hicks, John R.	Major, Medical Corps. January 3, 1919. American Expeditionary Forces, France.
Hilgard, Geo. E.	Major, Medical Corps. June 13, 1918. American Expeditionary Forces, France.
Hill, Armstrong	First lieutenant, Veterinary Corps. December 25, 1918. American Expeditionary Forces, France.
Hill, Richard C.	Captain, Medical Corps. April 17, 1918. Fort Worden, Wash.
Hillock, Norman W.	Second lieutenant, Veterinary Corps. September 9, 1917. Fort Sam Houston, Tex.
Hobbs, Austin L.	First lieutenant, Medical Corps. September 26, 1918. American Expeditionary Forces, France.
Hockett, Geo. H.	Captain, Medical Corps. December 1, 1918. American Expeditionary Forces, France.
Hoffman, Wade H.	First lieutenant, Dental Corps. October 14, 1918. Camp Upton, Long Island, N. Y.
Holeton, Arthur J.	First lieutenant, Medical Corps. December 21, 1918. American Expeditionary Forces, France.
Holman, Joseph D.	Second lieutenant, Sanitary Corps. October 20, 1918. American Expeditionary Forces, France.
Holmberg, Carl E.	Lieutenant colonel, Medical Corps. January 1, 1919. Whipple Barracks, Ariz.
Holzman, Martin M.	First lieutenant, Medical Corps. October 20, 1918. Fort Oglethorpe, Ga.
Hopkins, Odos A.	Captain, Medical Corps. January 15, 1918. Camp Beauregard, La.
Houser, Marcus C.	First lieutenant, Medical Corps. October 7, 1918. Camp Jackson, S. C.
Hoverter, Clarence E.	First lieutenant, Sanitary Corps. October 20, 1918. American Expeditionary Forces, France.
Hoyt, Francis R.	First lieutenant, Medical Corps. December 28, 1918. Died at sea.
Hudson, Carl B.	First lieutenant, Medical Corps. October 2, 1918. American Expeditionary Forces, France.
Huff, Burwell R.	First lieutenant, Sanitary Corps. January 12, 1919. American Expeditionary Forces, France.
Hull, Eugene F.	First lieutenant, Medical Corps. October 18, 1918. Little Rock, Ark.
Hull, Geo. E.	First lieutenant, Medical Corps. March 1, 1918. Mantau, Ohio.
Hull, Robert L.	Major, Medical Corps. January 4, 1919. San Francisco, Calif.
Hungerford, Henry E.	First lieutenant, Medical Corps. February 1, 1918. Fort Oglethorpe, Ga.
Hunter, Tony E.	First lieutenant, Medical Corps. April 18, 1919. Camp Shelby, Miss.
Jackson, Howard B.	Captain, Medical Corps. October 13, 1918. Fort Oglethorpe, Ga.
Janeway, Theodore C.	Major, Medical Corps. December 27, 1917. Baltimore, Md.
Jennings, Allen H.	Captain, Sanitary Corps. December 15, 1918. Camp Shelby, Miss.
Johnson, Alfred	First lieutenant, Medical Corps, November 6, 1918. Clyde, Kans.
Johnson, Roy W.	First lieutenant, Medical Corps. October 16, 1918. Camp Mills, N. Y.
Johnson, Walter S.	Captain, Medical Corps. April 26, 1918. San Francisco, Calif.
Johnston, John A.	Captain, Medical Corps. August 1, 1919. Manila, P. I.
Johnston, Thomas P.	First lieutenant, Medical Corps. October 8, 1918. American Expeditionary Forces, France.
Jones, Alexander H.	First lieutenant, Dental Corps. October 1, 1918. American Expeditionary Forces, France.

Jones, Benjamin G.	First lieutenant, Medical Corps. October 17, 1918. Camp Stuart, Va.
Jones, Earl P.	Captain, Dental Corps. March 3, 1919. American Expeditionary Forces, France.
Jones, Granville R.	Captain, Sanitary Corps. December 22, 1918. Camp Benning, Ga.
Kalaher, Leonard M.	First lieutenant, Medical Corps. February 9, 1919. American Expeditionary Forces, France.
Kantner, Wm. C.	First lieutenant, Medical Corps. September 18, 1918. American Expeditionary Forces, France.
Karp, Wm.	First lieutenant, Medical Corps. October 9, 1918. Camp Meade, Md.
Karpas, Morris J.	Major, Medical Corps. July 4, 1918. American Expeditionary Forces, France.
Kay, Wm. V.	Captain, Medical Corps. April 10, 1919. Oteen, N. C.
Keator, Frank	Captain, Medical Corps. December 29, 1917. Kingston, N. Y.
Keller, Ernest V.	Major, Medical Corps. June 3, 1919. Fort McPherson, Ga.
Kelso, Curtis Elmer	First lieutenant, Medical Corps. January 8, 1919. Fort Oglethorpe, Ga.
Keough, Peter L.	Captain, Medical Corps. April 15, 1918. Camp Sherman, Ohio.
Kerans, Montie C.	First lieutenant, Sanitary Corps. January 6, 1919. Camp Dodge, Iowa.
Kinyoun, Joseph James	Major, Medical Corps. February 14, 1919. Washington, D. C.
Kitchens, Lewis W.	First lieutenant, Medical Corps. October 30, 1918. American Expeditionary Forces, France.
Knapp, Lee H.	First lieutenant, Medical Corps. May 22, 1918. British Expeditionary Forces, France.
Knight, Frank H.	Captain, Medical Corps. October 28, 1918. American Expeditionary Forces, France.
Kratze, Louis R.	First lieutenant, Medical Corps. October 28, 1918. Camp Crane, Pa.
Kreamer, Wilbur C.	First lieutenant, Veterinary Corps. February 26, 1919. American Expeditionary Forces, France.
Kreitman, Albert L.	First lieutenant, Dental Corps. October 4, 1918. Camp Meade, Md.
Kuykendall, John E.	Captain, Medical Corps. February 22, 1919. American Expeditionary Forces, France.
Kyser, Philip M.	First lieutenant, Medical Corps. September 19, 1918. Camp Lee, Va.
Laid, Harry B.	Captain, Dental Corps. May 5, 1919. Fort Sill, Okla.
Larson, Albert M.	First lieutenant, Medical Corps. October 13, 1918. American Expeditionary Forces, France.
Lavelle, Harry M.	Captain, Medical Corps. May 29, 1919. American Expeditionary Forces, France.
Laws, Clement E.	Captain, Medical Corps. April 21, 1918. Des Moines, Iowa.
Lawson, John K.	First lieutenant, Medical Corps. May 26, 1919. American Expeditionary Forces, France.
Lee, Jeptha D.	First lieutenant, Veterinary Corps. March 1, 1919. American Expeditionary Forces, France.
Leiser, Samuel B.	First lieutenant, Medical Corps. September 16, 1918. Chicago, Ill.
Leonard, Frank S.	First lieutenant, Dental Corps. January 13, 1919. American Expeditionary Forces, France.
Lewis, John R.	First lieutenant, Medical Corps. September 25, 1918. Hoboken, N. J.
Lichty, Milton J.	Captain, Medical Corps. February 14, 1918. Camp Taylor, Ky.
Long, John G.	First lieutenant, Medical Corps. October 24, 1918. Lancaster, Pa.
Lovellette, Lecount R.	First lieutenant, Medical Corps. December 2, 1918. Fort Sam Houston, Tex.

Lubiyz, Wm. M.	First lieutenant, Dental Corps. October 11, 1918. Camp Dix, N. J.
Luther, John W.	Captain, Medical Corps. December 28, 1917. At sea.
Lynch, Woods W.	Major, Medical Corps. June 9, 1918. Camp Sheridan, Ala.
McCauley, Lawrence L.	Second lieutenant, Sanitary Corps. November 6, 1918. American Expeditionary Forces, France.
McCown, Thomas B.	Major, Medical Corps. June 16, 1919. El Paso, Tex.
McCurdy, Asa C.	Major, Medical Corps. November 28, 1918. American Expeditionary Forces, France.
McFarland, Noah M.	First lieutenant, Medical Corps. December 16, 1918. Camp Greenleaf, Ga.
McIntosh, Harry C.	First lieutenant, Medical Corps. October 5, 1918. Camp Sherman, Ohio.
McMichael, Charles P.	First lieutenant, Ambulance Corps. January 23, 1918. New York, N. Y.
McNeil, Herbert L.	First lieutenant, Medical Corps. November 3, 1918. American Expeditionary Forces, France.
Macomber, Clarence A.	First lieutenant, Medical Corps. December 20, 1918. Camp Mills, Long Island, N. Y.
Mallette, Lester B.	Captain, Veterinary Corps. October 7, 1918. Camp Lee, Va.
Magnussen, Arthur H.	Second lieutenant, Sanitary Corps. February 14, 1919. American Expeditionary Forces, France.
Manns, Geo. W.	Captain, Sanitary Corps. October 6, 1918. American Expeditionary Forces, France.
Marcley, Harry S.	First lieutenant, Medical Corps. November 18, 1918. Camp Eustis, Va.
Martin, Harry P.	First lieutenant, Medical Corps. October 12, 1918. Camp Custer, Mich.
Martin, Wilford W.	First lieutenant, Medical Corps. December 4, 1918. British Expeditionary Forces, France.
Martin, Wm. J.	First lieutenant, Medical Corps. July 21, 1918. Liverpool, England.
Mathers, Geo. S.	Captain, Medical Corps. October 6, 1918. Baltimore, Md.
Matthews, Herbert H.	Second lieutenant, Sanitary Corps. October 25, 1918. Camp Sheridan, Ala.
Mattox, Geo. W.	First lieutenant, Dental Corps. October 15, 1918. American Expeditionary Forces, France.
Mauney, Samuel M.	Captain, Medical Corps. November 1, 1918. American Expeditionary Forces, France.
Mickley, Harold F.	First lieutenant, Medical Corps. March 18, 1918. Camp Dix, N. J.
Middlekauff, Casper J.	First lieutenant, Medical Corps. October 8, 1918. American Expeditionary Forces, France.
Miller, Leo C.	First lieutenant, Medical Corps. December 14, 1918. Champaign, Ill.
Miller, Wm. L.	First lieutenant, Medical Corps, May 28, 1918. American Expeditionary Forces, France.
Moffett, Samuel F.	First lieutenant, Dental Corps. January 16, 1919. Fort Bliss, Tex.
Monnier, Joseph C.	First lieutenant, Medical Corps. October 1, 1918. Canton, Ohio.
Moore, Hugh T.	Captain, Medical Corps. April 8, 1918. Camp Kearny, Calif.
Moore, Zack J.	First lieutenant, Medical Corps. October 26, 1918. American Expeditionary Forces, France.
Moquin, Edmond I.	First lieutenant, Medical Corps. October 11, 1918. Chattanooga, Tenn.
Moran, Timothy J.	First lieutenant, Medical Corps. October 16, 1918. Fort Oglethorpe, Ga.
Morin, Adrain.	First lieutenant, Dental Corps. October 18, 1918. Camp Fremont, Calif.
Morrison, Paul F.	Second lieutenant, Sanitary Corps. July 2, 1919. Charleston, S. C.

Morriss, Wm. S	First lieutenant, Medical Corps. October 11, 1918. Fall River, Mass.
Mueller, Albert P	Captain, Medical Corps. October 9, 1918. Camp Zachary Taylor, Ky.
Munson, James F	Captain, Medical Corps. October 25, 1918. Plattsburg, N. Y.
Murphy, John C	First lieutenant, Medical Corps. July 19, 1917. Fort Ethan Allen, Vt.
Murphy, William T	First lieutenant, Medical Corps. November 2, 1918. American Expeditionary Forces, France.
Murtagh, John A	Lieutenant colonel, Medical Corps. July 5, 1919. San Francisco, Calif.
Neal, Max	Captain, Dental Corps. March 16, 1919. American Expeditionary Forces, France.
Neudecker, Eugene W	Second lieutenant, Veterinary Corps, November 2, 1918. Camp Cody, N. Mex.
Nichols, Jay D	Second lieutenant, Veterinary Corps. December 11, 1918. Camp Travis, Tex.
Nichols, Wm. S	First lieutenant, Medical Corps. June 21, 1918. Fort McPherson, Ga.
Niles, Will C	First lieutenant, Dental Corps. October 4, 1918. Boston, Mass.
Nolan, Martin F	First lieutenant, Medical Corps. October 9, 1918. American Expeditionary Forces, France.
Norris, Samuel C	Captain, Medical Corps. August 4, 1918. Anderson, Ind.
Norstedt, Gustaf L	First lieutenant, Medical Corps. March 15, 1918. Camp Upton, N. Y.
O'Bryan, Harry J	Captain, Medical Corps. April 3, 1918. Fort Snelling, Minn.
Oren, Samuel L	First lieutenant, Medical Corps. October 9, 1918. American Expeditionary Forces, France.
Orser, Thomas H	Captain, Medical Corps. April 20, 1919. Leonia, N. J.
Owen, Fred S	Captain, Sanitary Corps. October 13, 1918. Washington, D. C.
Paley, Israel	Second lieutenant, Veterinary Corps, October 16, 1918. Camp Cody, N. Mex.
Palmer, Thomas H	Captain, Medical Corps. April 20, 1919. Leonia, N. J.
Parker, Harry R	First lieutenant, Medical Corps. December 23, 1918. Garden City, Long Island, N. Y.
Parker, Richard E	First lieutenant, Medical Corps. June 5, 1919. Oteen, N. C.
Parliamint, David H	First lieutenant, Medical Corps. October 2, 1918. Camp Dix, N. J.
Parrish, Homer C	First lieutenant, Medical Corps. October 9, 1918. Camp Greenleaf, Ga.
Parson, Russell C	Captain, Medical Corps, March 1, 1919. American Expeditionary Forces, France.
Patterson, Loy A	First lieutenant, Dental Corps. July 19, 1918. Camp Beauregard, La.
Peebler, Raymond E	First lieutenant, Medical Corps. October 20, 1918. American Expeditionary Forces, France.
Pennington, John A	First lieutenant, Medical Corps. October 4, 1918. New York, N. Y.
Peterson, Lee B	Second lieutenant, Veterinary Corps. December 16, 1918. Camp Lee, Va.
Peterson, Walter F	First lieutenant, Dental Corps. September 6, 1918. Camp Custer, Mich.
Phelan, Edward F	Captain, Medical Corps. December 9, 1918. British Expeditionary Forces, France.
Phillips, Leslie J	First lieutenant, Medical Corps. October 13, 1918. American Expeditionary Forces, France.
Phillips, Wendell J	First lieutenant, Medical Corps. October 13, 1918. Camp Lee, Va.

Pillans, Porter P	First lieutenant, Medical Corps. October 12, 1918. Fort Oglethorpe, Ga.
Postle, Merton M	Major, Dental Corps. October 15, 1918. Camp Taylor, Ky.
Potts, Francis E	Second lieutenant, Veterinary Corps. November 12, 1918. Camp Kearny, Calif.
Powless, Josiah A	First lieutenant, Medical Corps. November 6, 1918. American Expeditionary Forces, France.
Pratt, Frank S	Captain, Medical Corps. February 12, 1918. Fort D. A. Russell, Wyo.
Pretz, Geo. R	First lieutenant, Medical Corps. October 5, 1918. Syracuse, N. Y.
Price, Grover C	First lieutenant, Medical Corps. October 30, 1918. American Expeditionary Forces, France.
Provost, Addison J	Captain, Medical Corps. July 7, 1918. Hot Springs, Ark.
Prudden, Claude E	Major, Medical Corps. October 7, 1918. American Expeditionary Forces, France.
Rabin, Nathan W	First lieutenant, Veterinary Corps. November 10, 1918. Camp Wheeler, Ga.
Raines, Thomas H	First lieutenant, Medical Corps. May 24, 1918. Fort Riley, Kans.
Ream, Wm. R	Major, Medical Corps. August 24, 1918. Effingham, Ill.
Reed, Clinton V	First lieutenant, Medical Corps. October 7, 1918. American Expeditionary Forces, France.
Reese, Wm. C	First lieutenant, Medical Corps. October 20, 1918. New York, N. Y.
Reid, John L	First lieutenant, Medical Corps. October 16, 1918. Camp Mills, N. Y.
Reinhard, Walter O	First lieutenant, Dental Corps. October 3, 1918. Camp Custer, Mich.
Reno, Wm. W	Lieutenant colonel, Medical Corps. March 21, 1918. At sea.
Rice, Victor M	Captain, Medical Corps. October 13, 1918. Fort Oglethorpe, Ga.
Richards, Davis N	First lieutenant, Medical Corps. October 12, 1918. Camp Merritt, N. J.
Ricker, Charles D	Major, Medical Corps. August 4, 1919. Takoma Park, D. C.
Risinger, James T	First lieutenant, Medical Corps. January 4, 1919. New York, N.Y.
Robe, Orin W	Captain, Medical Corps. October 25, 1918. American Expeditionary Forces, France.
Rogers, Elton B	Captain, Medical Corps. January 2, 1919. American Expeditionary Forces, France.
Rosenthal, Joseph D	First lieutenant, Medical Corps. October 22, 1918. Markleton, Pa.
Rousseau, Zotique	Captain, Medical Corps. December 10, 1917. Troy, N. Y.
Rudder, Bryant C	First lieutenant, Medical Corps. October 14, 1918. Fort Oglethorpe, Ga.
Russell, Donald G	First lieutenant, Medical Corps. October 17, 1918. American Expeditionary Forces, France.
Ryan, Hugh T	First lieutenant, Medical Corps. October 7, 1918. Fort Oglethorpe, Ga.
Rybolt, Stephen B	First lieutenant, Medical Corps. February 10, 1918. Camp Dodge, Iowa.
Sampson, Edwin F	First lieutenant, Medical Corps. April 22, 1919. Camp Taylor, Ky.
Sanders, Frank B	First lieutenant, Medical Corps. July 24, 1918. American Expeditionary Forces, France.
Sanderson, Mortimer	Lieutenant colonel, Dental Corps. July 30, 1918. Camp Cody, N. Mex.
Sarver, Howard C	Major, Medical Corps. July 24, 1919. Charleston, W. Va.
Saunders, Ralph T	First lieutenant, Medical Corps. October 12, 1918. Camp Eustis, Va.

Scheppach, Henry A	First lieutenant, Medical Corps. January 29, 1919. New Haven, Conn.
Schopmeyer, Arthur C	Second lieutenant, Veterinary Corps. October 8, 1918. Camp Beauregard, La.
Scott, Bradford R. A	First lieutenant, Medical Corps. November 12, 1918. San Antonio, Tex.
Scott, Murat H	First lieutenant, Medical Corps. October 19, 1918. Fort Oglethorpe, Ga.
Seidell, John L	First lieutenant, Sanitary Corps. October 22, 1918. Louisville, Ky.
Sellew, Timothy G	Captain, Medical Corps. October 20, 1918. Camp Grant, Ill.
Shaffner, Phillip F	First lieutenant, Medical Corps. October 21, 1918. Fort Riley, Kans.
Shannon, Samuel D	First lieutenant, Medical Corps. November 5, 1918. British Expeditionary Forces, France.
Shaw, Roy St. L	Second lieutenant, Veterinary Corps. October 19, 1918. Camp Lee, Va.
Shear, Harold E	First lieutenant, Medical Corps. October 4, 1918. Hoboken, N. J.
Sheehan, Edward M	Captain, Medical Corps. January 12, 1918. Camp Cody, N. Mex.
Shryer, Julius L	First lieutenant, Medical Corps. November 4, 1918. American Expeditionary Forces, France.
Silverthorne, Alfred E	Captain, Sanitary Corps. June 9, 1919. San Francisco, Calif.
Simm, Francis R	First lieutenant, Dental Corps. October 7, 1918. Fort Oglethorpe, Ga.
Simons, John S	First lieutenant, Dental Corps. October 2, 1918. Camp Tobyhanna, Pa.
Slocum, Homer J	First lieutenant, Medical Corps. October 17, 1918. Fort Oglethorpe, Ga.
Smith, Carl C	First lieutenant, Medical Corps. February 17, 1919. American Expeditionary Forces, France.
Smith, Cecil C	First lieutenant, Dental Corps. October 18, 1918. Camp Travis, Tex.
Smith, Cole F	First lieutenant, Medical Corps. October 16, 1918. Camp Stuart, Va,
Smith, Walter P	First lieutenant, Medical Corps. October 31, 1918. Fort Oglethorpe, Ga.
Smith, Wm. Chester	Captain, Medical Corps. December 11, 1918. Camp Sherman, Ohio.
Snyder, Edward T	First lieutenant, Veterinary Corps. October 27, 1918. American Expeditionary Forces, France.
Solovei, Samuel	First lieutenant, Medical Corps. October 15, 1918. American Expeditionary Forces, France.
Sorgatz, Frank B	Captain, Medical Corps. October 19, 1918. Fort Bliss, Tex.
Spiegelberg, Sidney L	First lieutenant, Medical Corps. July 14, 1918. American Expeditionary Forces, France.
Squires, James W	Captain, Medical Corps. December 16, 1918. American Expeditionary Forces, France.
Staples, Bernard F	First lieutenant, Dental Corps. September 24, 1918. Camp Devens, Mass.
Stewart, Edward S	First lieutenant, Medical Corps. October 19, 1918. Fort Oglethorpe, Ga.
Stewart, Lyell R	Captain, Sanitary Corps. August 25, 1919. Hoboken, N. J.
Stocker, Delmar H	First lieutenant, Dental Corps. October 3, 1918. American Expeditionary Forces, France.
Stone, Duncan M	First lieutenant, Medical Corps. October 13, 1918. Fort Oglethorpe, Ga.
Sturtevant, Charles A	Captain, Medical Corps. September 23, 1918. Camp Devens, Mass.
Swarts, Joseph L	First lieutenant, Medical Corps. December 24, 1918. Fort Oglethorpe, Ga.

Syrop, Edward F	First lieutenant, Medical Corps. October 27, 1918. American Expeditionary Forces, France.
Taylor, Herbert D	First lieutenant, Medical Corps. October 7, 1918. New York, N. Y.
Taylor, Hugh F	Captain, Medical Corps. December 16, 1918. Camp Mills, N. Y.
Thomas, Frank	First lieutenant, Medical Corps. October 10, 1918. New York, N. Y.
Thomson, Chester L	Captain, Sanitary Corps. June 19, 1919. Fort Bayard, N. Mex.
Thornburgh, Robert M	Colonel, Medical Corps. October 9, 1919. San Francisco, Calif.
Thorpe, Harvey L	Captain, Medical Corps. November 4, 1918. At sea.
Todd, Frank C	Lieutenant colonel, Medical Corps. July 4, 1918. Chicago, Ill.
Towle, Frederick S	Captain, Medical Corps. October 10, 1918. Colonia, N. J.
Traylor, John H	First lieutenant, Medical Corps. October 26, 1918. Camp McArthur, Tex.
Tredway, Edward E	First lieutenant, Medical Corps. May 19, 1918. San Diego, Calif.
Trock, Michael J	First lieutenant, Medical Corps. July 23, 1918. American Expeditionary Forces, France.
Tull, Guy A	First lieutenant, Medical Corps. July 13, 1918. Kansas City, Mo.
Tupper, Geo	Captain, Medical Corps. June 17, 1918. Camp Kearny, Calif.
Turner, Ralph W	First lieutenant, Medical Corps. October 17, 1918. Fort Oglethorpe, Ga.
Turner, Wm. G	Captain, Medical Corps. October 11, 1918. Fort Benjamin Harrison, Ind.
Twigg, Neal F	First lieutenant, Medical Corps. October 10, 1918. Fort Oglethorpe, Ga.
Underwood, Robert B	Captain, Medical Corps. November 13, 1918. American Expeditionary Forces, France.
Ury, John B	First lieutenant, Medical Corps. October 17, 1918. Fort Oglethorpe, Ga.
Van Epps, Homer E	First lieutenant, Medical Corps. October 17, 1918. Camp Mills, N. Y.
Vaughan, Victor C., jr	Major, Medical Corps. June 4, 1919. American Expeditionary Forces, France.
Vogt, David M	Captain, Medical Corps. May 30, 1918. Summit, N. J.
Waage, Frederick O	Major, Medical Corps. October 31, 1918. Fort Bliss, Tex.
Wagner, Matthias M	First lieutenant, Medical Corps. September 18, 1917. Fort Story, Va.
Walcott, Wm. W	Captain, Medical Corps. March 16, 1919. Camp Grant, Ill.
Wald, Alfred G	First lieutenant, Dental Corps. October 15, 1918. Camp Jackson, S. C.
Walker, Raymond A	First lieutenant, Dental Corps. September 28, 1918. Camp Devens, Mass.
Wall, Harrison B	Captain, Dental Corps. March 28, 1918. Camp Custer, Mich.
Walters, Edward H	First lieutenant, Sanitary Corps. September 25, 1918. American Expeditionary Forces, France.
Washington, Fay P	First lieutenant, Medical Corps. December 10, 1918. American Expeditionary Forces, France.
Weaver, Wm. I	Second lieutenant, Sanitary Corps. November 10, 1918. American Expeditionary Forces, France.
Weil, Richard	Major, Medical Corps. November 19, 1917. Camp Wheeler, Ga.
Weintz, Charles H	Captain, Medical Corps. October 14, 1918. Camp Sherman, Ohio.
Welin, Albert F	First lieutenant, Medical Corps. October 21, 1918. Camp Kearny, Calif.
Welker, Henry C	Captain, Medical Corps. May 1, 1918. Takoma Park, D. C.
Wells, Brooks H	Captain, Medical Corps. July 6, 1917. New York, N. Y.
Weston, Henry R	Major, Medical Corps. November 27, 1918. Windsor, Vt.
Wheeler, Arthur H	First lieutenant, Medical Corps. October 26, 1918. Camp Kearny, Calif.

Whidden, Rae W............Captain, Medical Corps. September 20, 1918. Boston, Mass.

White, Clarence H...........First lieutenant, Medical Corps. November 2, 1918. American Expeditionary Forces, France.

Whitehead, Wade H.........First lieutenant, Medical Corps. November 23, 1918. Hoboken, N. J.

Whitney, Walter............Major, Medical Corps. September 4, 1918. Augusta Arsenal, Ga.

Wilcox, Geo. E..............First lieutenant, Dental Corps. September 28, 1918. Southampton, England.

Wilhite, Fielding M..........Captain, Dental Corps. April 24, 1919. Fort Riley, Kans.

Wilkinson, Gilbert M.........First lieutenant, Medical Corps. October 14, 1918. Memphis, Tenn.

Williams, Alexander W......Major, Medical Corps. October 5, 1918. American Expeditionary Forces, France.

Williams, John E............First lieutenant, Medical Corps. September 3, 1918. American Expeditionary Forces, France.

Williamson, Ryan M.........Second lieutenant, Veterinary Corps. April 29, 1919. American Expeditionary Forces, France.

Williford, Gordon G..........First lieutenant, Medical Corps. October 12, 1918. Charleston, S. C.

Winter, Otto L...............First lieutenant, Medical Corps. January 2, 1919. River Falls, Wis.

Wolfe, Harold W.............First lieutenant, Veterinary Corps. October 23, 1918. Camp Doniphan, Okla.

Wright, Halstead R...........Captain, Medical Corps. October 17, 1918. Fort Oglethorpe, Ga.

Yoder, Roydon B.............First lieutenant, Medical Corps. December 9, 1918. Custer, Mich.

Zimmerman, Henry..........First lieutenant, Medical Corps. August 6, 1919. Springfield, Mass.

Zwink, Edwin B.............First lieutenant, Dental Corps. November 7, 1918. Camp Cody, N. Mex.

OFFICERS OF THE MEDICAL DEPARTMENT WHO DIED BEFORE BEING CALLED INTO ACTIVE SERVICE.

Allison, Lester J.............First lieutenant, Dental Reserve Corps. April 20, 1918. Iowa City, Iowa.

Bobrick, Arthur L...........First lieutenant, Medical Reserve Corps. April 17, 1918. New York, N. Y.

Bond, Edwin E..............First lieutenant, Medical Reserve Corps. September 25, 1918, Stronghurst, Ill.

Burkhartmaier, John H.......First lieutenant, Medical Reserve Corps. October 16, 1918. Avondale, Pa.

Carpenter, Robert B.........First lieutenant, Medical Reserve Corps. October 25, 1918. Clifton, Tex.

Casselman, Ernst L..........First lieutenant, Dental Reserve Corps. November 5, 1918. Effingham, Ill.

Colin, Geo. A.................First lieutenant, Medical Reserve Corps. October 10, 1918. Chicago, Ill.

Dollahan, Martin L..........First lieutenant, Medical Reserve Corps. December 15, 1917. New York, N. Y.

Duwe, Harry E...............First lieutenant, Dental Reserve Corps. October 28, 1918. Arlington, Iowa.

Endicott, Clayton A..........First lieutenant, Medical Reserve Corps. October 8, 1918. Frankfort, Ind.

Foster, Argo M...............First lieutenant, Medical Reserve Corps. September 2, 1918. Kaukauna, Wis.

Gray, Samuel................First lieutenant, Medical Reserve Corps. January 28, 1919. Baltimore, Md.

Hampton, Wilburn E........First lieutenant, Medical Reserve Corps. October 21, 1918. Ferris, Tex.

Hanson, Roy E.	First lieutenant, Dental Reserve Corps. November 25, 1918. Cambridge Springs, Pa.
Harmon, Claude A.	First lieutenant, Medical Reserve Corps. March 12, 1918. Upton, Wyo.
Harrington, Wm. B.	First lieutenant, Medical Reserve Corps. May 14, 1918. La Salle, Ill.
Henry, Carl R.	First lieutenant, Dental Reserve Corps. September 4, 1917. Cuba, Ill.
Higgins, John C.	First lieutenant, Dental Reserve Corps. October 18, 1918. McAdoo, Pa.
Holbrook, Charles E.	First lieutenant, Medical Reserve Corps. October 18, 1918. Montreal, Canada.
Hull, Geo. E.	First lieutenant, Medical Reserve Corps. March 1, 1918. Mantua, Ohio.
Hyatt, Clinton L.	Captain, Medical Reserve Corps. October 17, 1918. Kissimmee, Fla.
Kendall, Samuel P.	Second lieutenant, Veterinary Reserve Corps. October 2, 1918. East Alton, Ill.
Krantz, Herman W.	First lieutenant, Medical Reserve Corps. October 25, 1918. Union Bridge, Md.
Lebret, Gerard H.	First lieutenant, Medical Reserve Corps. October 25, 1918. Montclair, N. J.
Leiser, Oscar	Captain, Medical Reserve Corps. December 8, 1917. New York, N. Y.
Lubin, Edward K.	First lieutenant, Medical Reserve Corps. October 26, 1918. New York, N. Y.
McArthur, Benjamin F.	First lieutenant, Medical Reserve Corps. October 19, 1918. Lauderdale, Miss.
McGuffin, Robt. K.	First lieutenant, Medical Reserve Corps. October 20, 1918. Imperial, Calif.
Osborne, Lloyd A.	First lieutenant, Dental Reserve Corps. July 24, 1918. Fremont, Iowa.
Richey, Albert R.	Captain, Medical Reserve Corps. October 11, 1918. Herreid, S. Dak.
Thompson, Alvah R.	First lieutenant, Medical Reserve Corps. December 22, 1917. Atlanta, Ga.
Trevelyan, Geo. H.	First lieutenant, Medical Reserve Corps. January 31, 1919. Riverside, Calif.
Vicars, Francis O.	First lieutenant, Medical Reserve Corps. August 14, 1918. Livingston, Mont.
Weidert, Raymond M.	First lieutenant, Dental Reserve Corps. November 7, 1918. Wilcox, Pa.

ABBREVIATIONS.

The following abbreviations are used either in the text or in the reference appended thereto:

A. E. F., American Expeditionary Forces.
A. G. O., Adjutant General's Office.
A. R., Army Regulations.
A. S., Air Service.
A. W. O. L., Absent without Leave.
A. S. A., Air Service, Military Aeronautics.
B. A. I., Bureau of Animal Industry.
Bull., Bulletin.
B. W. R. I., Bureau of War Risk Insurance.
C. A. R., Changes, Army Regulations.
Cir., Circular.
Cir. Letter, Circular Letter.
Compt. Treas., Comptroller of the Treasury.
Cpl., Corporal.
C. S., Contract Surgeon.
C. W. S., Curative Workshop.
D. C., Dental Corps.
D. S., Detached Service.
F. A., Field Artillery.
F. and S., Finance and Supply.
G. O., General Orders.
I. D., Infectious Diseases.
Inf., Infantry.
J. A. G., Judge Advocate General.
L. C., Line of Communication.
M. A. C., Medical Administrative Corps.
M. C., Medical Corps.
M. M. D., Manual for the Medical Department.
M. O. T. C., Medical Officers' Training Camp.
M. R. C., Medical Reserve Corps.
M. T. C., Motor Transport Corps.
Memo., Memorandum.
N. A., National Army.
N. G., National Guard.
O. D. P. and S., Office of Director, Purchase and Storage.
Ops. J. A. G., Opinions of the Judge Advocate General.
Pvt., Private.
Q. M. C., Quartermaster Corps.
S. A. T. C., Students' Army Training Corps.
S. C., Sanitary Corps.
S. C. D., Surgeon's Certificate of Disability.
S. D., Statistical Department.
S. G. O., Surgeon General's Office.
Sgt., Sergeant.
S. O., Special Orders.
T. O., Tables of Organization.
U. S. A., United States Army.
V. C., Veterinary Corps.

WAR DEPARTMENT, GENERAL ORDERS, BULLETINS AND CIRCULARS, SPECIAL REGULATIONS.

AMBULANCE CORPS.

Organization of United States Ambulance Service.

* * * * * * *

II...1. Under authority conferred by section 2 of the act of Congress "authorizing the President to increase temporarily the Military Establishment of the United States" approved May 18, 1917, the President directs that there be organized for the period of the existing emergency, the enlisted strength being raised and maintained by voluntary enlistment or draft, as a part of the Medical Department, the United States Army Ambulance Service consisting of the following personnel:

COMMISSIONED.

Colonel	1
Lieutenant colonels	2
Majors	8
Captains	32
First lieutenants	160
Total	203

ENLISTED.

One hundred and sixty ambulance sections, each consisting of:

Sergeant, first class	1
Sergeants	2
Corporal	1
Mechanics	2
Cooks	2
Privates, first class	26
Privates	11
Total	45

2. The following transportation is authorized for each section:

Motor ambulances	20
Motor truck (2-ton)	1
Motor truck (¾-ton)	1
Motor car (five-passenger)	1
Motor cycle (with side car)	1

3. Officers for this corps will be provided as authorized by the third paragraph of section 1 and section 9 of the act of Congress approved May 18, 1917.

4. Under authority conferred by the first sentence of section 2 of the act of Congress approved May 18, 1917, members of the Medical Enlisted Reserve Corps ordered into active service with the ambulance sections organized in the United States under previous authority are transferred to the sections of the Ambulance Service organized in the United States under authority of this order. Notation of transfer, and in case of noncommissioned officers of continuance of warrant, will be made on the individual records of all enlisted men transferred.

(*G. O., No. 75, W. D., June 23, 1917.*)

Increase in Sections and Personnel of United States Ambulance Service.

1. Paragraph 1, Section II, General Orders, No. 75, War Department, 1917, organizing the United States Ambulance Service as a part of the Medical Department, is amended so as to provide for a total of 34 captains, 169 first lieutenants, and 169 ambulance sections.

(*G. O., No. 124, W. D., September 20, 1917.*)

ARMY NURSE CORPS.

Reorganization.

* * * * * * *

That the Nurse Corps (female) of the Medical Department of the Army shall hereafter be known as the Army Nurse Corps, and shall consist of one superintendent, who shall be a graduate of a hospital-training school having a course of instruction of not less than two years; of as many chief nurses, nurses, and reserve nurses as may from time to time be needed and prescribed or ordered by the Secretary of War, and, in the discretion of the Secretary of War, of not exceeding six assistant superintendents, and for each Army or separate military force beyond the continental limits of the United States, one director and not exceeding two assistant directors of nursing service, all of whom shall be graduates of hospital-training schools, and shall have passed such professional, moral, mental, and physical examinations as shall be prescribed by the Secretary of War.

Sec. 2. That rules and regulations prescribing the duties of the members of the Army Nurse Corps shall be prescribed by the Surgeon General of the United States Army, subject to the approval of the Secretary of War.

Sec. 3. That the superintendent shall be appointed by, and at his discretion be removed by, the Secretary of War; that all other members of said corps shall be appointed by, and, at his discretion, be removed by, the Surgeon General, by and with the approval of the Secretary of War; but the assistant superintendents, the directors, the assistant directors, and the chief nurses shall be appointed by promotion from other members of the corps, and shall, upon being relieved from duty as such, unless removed for incompetency or misconduct, revert to the grades in the corps from which they were promoted.

Sec. 4. That the annual rate of pay of the members of said corps shall be as follows: Superintendent, $2,400; assistant superintendents and directors, $1,800; assistant directors, $1,500; chief nurses, $120 in addition to the pay of a nurse; nurses, $720 for the first period of three years' service, $780 for the second period of three years' service, $840 for the third period of three years' service, $900 for the fourth period of three years' service, and $960 after 12 years' service in said corps (including in all cases time of service as contract nurse); reserve nurses, when upon active duty, will receive the same pay as nurses who have served in the corps for periods corresponding to the full period of their active service; and all members of said corps, in addition to the foregoing, the sum of $10 per month when serving beyond the continental limits of the United States (excepting Porto Rico and Hawaii).

Sec. 5. That members of said Nurse Corps shall be entitled to cumulative leave of absence with pay at the rate of 30 days for each calendar year of service in said corps, not exceeding, however, 120 days at one time, and in addition thereto sick leave not exceeding 30 days in any one calendar year in cases of illness or injury incurred in the line of duty.

Sec. 6. That members of said Nurse Corps shall receive transportation and necessary expenses when traveling under orders, and such allowances of quarters and subsistence and, during illness, such medical care as may be prescribed in regulations by the Secretary of War; and when at places where no public quarters are available, commutation in lieu thereof, and of heat and light therefor at such rates and upon such conditions as are now or shall hereafter be provided by law.

Sec. 7. That section 19 of chapter 192 of Thirty-first Statutes, page 753; chapter 50 of Thirty-seventh Statutes, page 72; that part of the act approved August 24, 1912 (Thirty-seventh Statutes, p. 575), providing for allowances, subsistence, and medical care during illness for the superintendent of the Nurse Corps; and that part of the act approved March 23, 1910 (Thirty-sixth Statutes, p. 249), prescribing the pay of the superintendent and members of the Nurse Corps be, and the same are, hereby, repealed.

(*Bull. No. 43, W. D., July 22, 1918.*)

Distinctive Garb.

* * * * * * *

III..1. Army nurses, members of Catholic orders whose vows require the wearing of a distinctive garb, are authorized to wear the garb of their order while traveling on land in this country without troops and while traveling on transports.

2. When this garb is worn they will also wear a device of the Army Nurse Corps, which will clearly mark them as members of that corps.

3. While on duty they will wear a distinctive cap, prescribed by the Surgeon General.

(*Bull. No. 51, W. D., August 31, 1918.*)

Initial Uniform.

* * * * * * *

II..1. In order to enable them immediately to comply with regulations requiring the wearing of uniform, a single initial uniform outfit is hereby authorized for issue to members of the Army Nurse Corps upon their first entry into the service, as follows:

One navy blue Norfolk suit.
One navy blue overcoat.
One navy blue flannel waist.
One navy blue velour hat for winter.
One navy blue straw for summer.
Two sets insignia, United States.
Two pairs insignia, badge of corps.

When members of the Army Nurse Corps are ordered to duty overseas with the American Expeditionary Forces, the following additional articles will be issued to them:

Six gray cotton uniforms.
One gray woolen sweater.
One gray woolen muffler.
One raincoat.
One blanket for use on transport.
One sleeping bag.
One steamer trunk.

2. Nurses who have been enrolled for service during the existing emergency and who have not been supplied with uniform outfits by the American Red Cross without cost to themselves will be entitled to the issue herein authorized. The Quartermaster General will supply the necessary articles of uniform for issue and for sale at cost price when issue is not authorized. The details of material, make, and design will conform to the specifications prescribed by the Surgeon General and no changes therein will be made without his authority.

(*G. O., No. 134, W. D., December 17, 1918.*)

Final Pay Accounts.

The provisions of Circular No. 148, War Department, 1918, relating to the discharge of enlisted men without complete records of service, and directing their discharge on supplementary service records and pay records based on affidavits sworn to by the soldier, are extended to include members of the Army Nurse Corps, in the preparation of their final pay accounts.

(*Cir. No. 182, W. D., December 30, 1918.*)

Advance of Per Diem Allowance to Members of Army Nurse Corps Ordered Home for Discharge.

Hereafter members of the Army Nurse Corps ordered home for discharge or relieved from active service may be paid in advance a flat per diem allowance as prescribed in paragraph 733, Army Regulations, as changed, for the period required to perform the journey home according to the schedules of the common carrier. The orders directing the travel will specify that the flat per diem allowances are authorized for the actual time required for the journey.

Such advance payments will be made on War Department Form No. 369, for individual cases or War Department Form No. 334, as an open roll when several must be paid on the same day. Without respect to columns or data on the printed forms, the vouchers will show in the case of each nurse the points of travel and the approximate date and hour the journey should commence and end. The brief and heading of the voucher should be modified to show that the same covers per diem travel allowances of members of the Army Nurse Corps ordered home for discharge or relieved from active service. Two copies of the order directing the travel must be filed with the voucher on which payment is made. The nurse's personal copy of the order will be indorsed by the paying officer showing the amount paid.

Care will be taken to see that such advance payments of travel allowances are indorsed on the nurse's letters of appointment or assignment as a check against error in final payment.

(*Cir. No. 185, W. D., April 14, 1919.*)

CAMP ORGANIZATIONS.

Control of.

1. Paragraph 191, Army Regulations, is amended so as to exempt from the control of department commanders, in all that pertains to administration, instruction, training, and discipline, all of the organized tactical divisions of the National Guard and National Army after they have arrived at their divisional camps.

Division commanders are enjoined to reduce correspondence and other administrative labor to a minimum, to decide all questions arising within their jurisdiction that are not reserved by law or regulations for the decision of the War Department, to forward no communications to the War Department that can properly be disposed of by themselves, and to pursue a vigorous policy with respect to the instruction and training of the troops under their command.

2. Supply of these divisions will be effected in accordance with the following general ininstructions:

(*a*) Department commanders will at once take steps to establish a camp supply depot at each camp of the National Guard or of the National Army within the limits of their departments.

Camp supply depots will include supplies from all supply departments for the camp at which located. The personnel for each will include a representative from each supply department, to be known as camp quartermaster, camp ordnance officer, etc., and such assistants as may be necessary. The work of the depot will be coordinated by an officer to be designated by the division commander. The representatives of supply departments which furnish few articles of equipment for troops may be taken from divisions.

(*b*) Camp supply depots will be filled from general depots or direct from contractors, under direction of bureau chiefs, who will designate the general depots to which requisitions from the camp depots will be sent by department commanders after action thereon by them.

(*c*) Camp supply depots will be under direction of division commanders, and organizations will requisition supplies from their own camp supply depots.

(*d*) The initial supplies for each camp supply depot will be furnished either on requisition from camp supply depots to department commanders, or without requisitions, as may be directed by the chief of the bureau concerned, on advance information of the number of organizations, strength, and date of arrival at camps.

(*e*) Thereafter maintenance supplies will be kept up by requisition from camp supply depots to department commanders, or to depots designated for their supply, as far as total stocks and deliveries will admit, on the basis of one month at camp supply depots, one month en route, and one month requisitioned for.

(*f*) The Quartermaster Corps will maintain in camp supply depots, on the above basis, supplies of clothing and equipage, subsistence stores, forage, fuel, crude and mineral oil, gasoline, lime, blacksmith coal, and other additional camp supplies; the other supply departments, such articles as are included in the equipment manuals, including spare parts and cleaning materials. The Engineer Department will include materials for instructions in trench warfare.

(*g*) The National Guard, when called into Federal service, will be supplied with necessary articles of uniform and personal equipment at mobilization points.

(*h*) Heavy tentage for the National Guard, unless otherwise ordered, when State organizations are to be mobilized at State mobilization camps, will be shipped direct to training camps, to be there apportioned out according to the needs of all organizations by division commanders, and on the basis of one large pyramidal tent to 12 men, until the total supply of tentage available is increased.

(*G. O., No. 96, W. D., July 20, 1917.*)

General Orders, No. 96, War Department, 1917, is rescinded and the following substituted therefor:

1. Paragraph 191, Army Regulations, is amended so as to exempt from the control of department commanders, in all that pertains to administration, supply, instruction, training, and discipline, all of the organized tactical divisions of the National Guard and National Army and troops attached thereto after they have arrived at the divisional camps. * * *

(*G. O., No. 137, W. D., October 30, 1917.*)

CERTIFICATE OF DISABILITY.

Discharge on.

When a soldier is discharged on surgeon's certificate of disability, a statement to that effect will be made on the discharge certificate as the reason for discharge, but the diagnosis as given on the certificate of disability will not be quoted; e. g., "SCD, 4th Ind. Hq., E. Dept., May 5, 1918." (*Cir. No. 292, W. D., June 5, 1919.*)

CHEMICAL WARFARE SERVICE.

Organization of.

I..1. Under authority conferred by sections 1, 2, 8, and 9 of the act of Congress "Authorizing the President to increase temporarily the military establishment of the United States," approved May 18, 1917, and the act "Authorizing the President to coordinate or consolidate executive bureaus, agencies, and offices, and for other purposes, in the interest of economy and the more efficient concentration of the Government," approved May 28, 1918, in pursuance of which act the President has issued an Executive order dated June 25, 1918, placing the experiment station at American University under control of the War Department, the President directs that the Gas Service of the Army be organized into a Chemical Warfare Service, National Army, to include:

(*a*) The Chemical Service Section, National Army.

(*b*) All officers and enlisted men of the Ordnance Department and Sanitary Corps of the Medical Department as hereinafter more specifically specified (regular officers affected being detailed and not transferred).

2. The officers for this service will be obtained as provided by the third paragraph of section 1 and by section 9 of the act of May 18, 1917, the enlisted strength being raised and maintained by voluntary enlistment or draft.

3. The rank, pay, and allowances of the enlisted men of the Chemical Warfare Service, National Army, shall be the same as now authorized for the corresponding grades in the Corps of Engineers.

4. The head of the Chemical Warfare Service, National Army, shall be known as the Director of the Chemical Warfare Service, and, under the direction of the Secretary of War, as such, he shall be, and hereby is, charged with the duty of operating and maintaining or surpervising the operation and maintenance of all plants engaged in the investigation, manufacture, or production of toxic gases, gas-defense appliances, the filling of gas shells, and proving grounds utilized in connection therewith and the necessary research connected with gas warfare, and he shall exercise full, complete, and exclusive jurisdiction and control over the manufacture and production of toxic gases, gas-defense appliances, including gas-shell filling plants and proving grounds utilized in connection therewith, and all investigation and research work in connection with gas warfare, and to that end he shall forthwith assume control and jurisdiction over all pending Government projects having to do or connected with such manufacture, production, and operation of plants and proving grounds for the Army and heretofore conducted by the Medical Department and Ordnance Department under the jurisdiction of the Surgeon General and the Chief of Ordnance, respectively, and all material on hand for such investigation or research, manufacture or production, operation of plants and proving grounds, and all lands, buildings, factories, warehouses, machinery, tools and appliances, and all other property, real, personal, or mixed, heretofore used in, or in connection with, the operation and maintenance of such plants and proving grounds for the purpose of investigation or research, manufacture or production, already procured and now held for such use by, or under the jurisdiction and control of, the Medical Department or the Ordnance Department, all books, records, files, and office equipment used by the Medical Department or the Ordnance Department in connection with such investigation or research, manufacture or production, or operation of plants and proving grounds, all rights under contract made by the Medical Department or Ordnance Department in, or in connection with, the operation of such plants and institutions as specified herein, all rights under contract made by the Medical Department or Ordnance Department in, or in connection with, such work, and the entire personnel (commissioned, enlisted, and civilian) of the Ordnance Department and Sanitary Corps of the Medical Department as at present assigned to or engaged upon work in, or in connection with, such investigation or research, manufacture or production, or operation of plants and proving grounds, are hereby transferred from the jurisdiction of the Ordnance Department and the Medical Department and placed under the jurisdiction of the Director of the Chemical Warfare Service, it being the intention hereof

to transfer from the jurisdiction of the Medical Department and the Ordnance Department to the jurisdiction of the Director of the Chemical Warfare Service, every function, power, and duty connected with the investigation, manufacture, or production of toxic gases, gas-defense appliances, including the necessary research connected with gas warfare, gas-shell filling plants, and proving grounds utilized in connection therewith, all property of every sort or nature used or procured for use in, or in connection with, said operation of such plants and proving grounds and the entire personnel of the Ordnance Department and Sanitary Corps of the Medical Department as at present assigned to, or engaged upon work in, or in connection with, the operation and maintenance of such plants engaged in the investigation, manufacture, or production of toxic gases, gas-defense appliances, including gas-filling plants and proving grounds utilized in connection therewith.

5. All unexpended funds of appropriations heretofore made for the Medical Department or Ordnance Department and already allotted for use in connection with the operation and maintenance of plants now engaged in, or under construction for the purpose of engaging in, the investigation, manufacture, or production of toxic gases or gas-defense appliances, including gas-shell filling plants, are hereby transferred to, and placed under the jurisdiction of, the Director of the Chemical Warfare Service for the purpose of meeting the obligations and expenditures authorized herein; and, in so far as such funds have not been already specifically allotted by the Medical Department and the Ordnance Department, for the purposes specified herein, they shall now be allotted by the Secretary of War in such proportions as shall to him seem best intended to meet the requirements of the situation and the intentions of Congress when making said appropriations, and the funds so allotted by the Secretary of War to meet the activities of the Chemical Warfare Service, as heretofore defined herein, are hereby transferred to, and placed under the jurisdiction of, the Director of the Chemical Warfare Service for the purpose of meeting the authorized obligations and expenditures of the Chemical Warfare Service.

6. This order shall be and remain in full force and effect during the continuation of the present war and for six months after the termination thereof by proclamation of the treaty of peace, or until theretofore amended, modified, or rescinded. * * *

(G. O., No. 62, W. D., June 28, 1918.)

CLOTHING.

Soldier's Allowance for.

* * * * * * *

III. General Orders, No. 89, War Department, July 11, 1917, provides that, commencing July 15, 1917, and continuing during the existing emergency, a soldier's allowance for clothing will be the quantity of clothing necessary and adequate for the service upon which he is engaged. Such order, in effect, suspends the money allowance for clothing of all enlisted men in active Federal service on July 14, 1917, as of and including that date, after which and commencing with July 15, 1917, an allowance of clothing in kind is provided.

The money clothing accounts of all soldiers in active Federal service on July 14, 1917, will be settled as of that date under the provisions of paragraphs 1160, 1161, or 1162, Army Regulations, as though for the purpose of such settlement, the men were separated from active service on such date. If in the settlement of July 14, 1917, the soldier is found indebted to the United States, this indebtedness will be reduced by an amount equal to the clothing allowance for the six months ending December 31, 1917, had such money allowance been continued in force to that date, less the amount already credited for the period July 1 to 14, 1917, inclusive, or so much of said difference as is necessary to cover the indebtedness. If the settlement, after deducting this credit, still shows indebtedness to the United States, the amount of such indebtedness will be entered on the next pay rolls and collected. Any amount found due the soldier for clothing drawn in kind will not be credited on pay rolls, but will be entered on his service record and credited on his final statements upon his separation from active service by discharge, furlough to the reserve, muster out, or otherwise.

No credit will be given a soldier on his money clothing account for serviceable clothing in his possession on July 14, 1917, which was drawn and charged against his clothing account on or before that date, regardless of whether he retains such clothing in his possession or is required to turn it in to a quartermaster. * * *

(G. O., No. 119, W. D., September 11, 1917.)

CONVALESCENT CAMPS.

Oversea Convalescent Detachments.

1. Soldiers who have been or who may be incapacitated while on duty overseas and who are convalescent in this country will not be transferred to development battalions in the future. General Orders, No. 45, War Department, 1918, is hereby modified in accordance with the above.

2. In each camp, cantonment, and post where oversea convalescents may be assembled there will be formed an oversea convalescent detachment. This detachment will consist of such officers. noncommissioned officers, cooks, and other grades of enlisted men as it may be necessary to detail for the purpose of administration, supply, and training, and such convalescents as are sent to the camp, cantonment, or post who have been incapacitated by virtue of having been on duty overseas. The detachment will be quartered and messed separately. While serving in oversea convalescent detachments, men will be carried on the detachment rolls in the grades held by them in their permanent organization.

3. In order to relieve congestion in general hospitals, commanding officers of such hospitals are hereby authorized to send oversea convalescents, whose hospital treatment has been completed, to oversea convalescent detachments in the following camps:

Beauregard.
Custer.
Devens.
Dix.
Dodge.
Funston.
Gordon.
Grant.
Hancock.
Jackson.
Kearny.
Lee.
Lewis.
MacArthur.
McClellan.
Meade.
Logan.
Pike.
Sevier.
Shelby.
Sherman.
Sheridan.
Taylor.
Travis.
Upton.
Wadsworth.
Wheeler.

Since it is the intention to discharge all oversea convalescents as soon as possible, consistent with the maximum physical improvement, commanders of general hospitals will, as far as practicable, send convalescents to the camps nearest to the homes of the men to be discharged. Intensive treatment and training of all convalescents assembled in oversea convalescent detachments will be immediately undertaken and continued in order that their cure or maximum improvement and subsequent discharge may be accomplished in the shortest possible time. On the last of each month commanders will report to The Adjutant General of the Army the number of men received in and the number of men discharged from oversea convalescent detachments during the month,

4. Commanding officers, upon whom the duty of organizing oversea convalescent detachments devolves, should bear in mind the importance of the work to be performed in these detachments. It is only by the selection of competent line and medical officers and thorough cooperation on the part of these that the best results can be obtained. The object sought is the return to civil life of these men in the best physical and mental condition.

5. Convalescents whose treatment and training has been completed will be promptly discharged in accordance with existing instructions without reference to the War Department.

(*Cir. No. 90, W. D., November 25, 1918.*)

Interpretation of Instructions Relative to the Discharge of Disabled Soldiers.

1. In order that the provisions of paragraph 2, Section II, Bulletin No. 36, War Department, 1918, may not unduly retard the discharge from the service of men clearly unfit for military service, the following interpretation of the spirit of this paragraph is published:

(*a*) Subparagraph (*a*) is intended to provide for the complete cure or maximum restoration of men incapacitated because of military service. Subparagraph (*b*) is intended to provide for the retention in the service of such disabled men until such time as their maximum restoration has been obtained. There will be many cases that will not be benefited by further sojourn in hospitals, convalescent centers, or development battalions. These should be promptly discharged. The surgeon who has the case in hand must be the judge as to whether or not maximum restoration has been secured, or if, after treatment in the hospital in which the patient is located is completed, the case will be further benefited by transfer to another hospital, convalescent center, or development battalion. Cases which, in the opinion of the surgeon, will be further benefited should be promptly transferred.

There will, furthermore, be many cases of disabled men who either possess funds or who have relatives or friends in position to afford them specialized care after discharge. In these cases disabled men may be discharged but not until the responsible commanding officer has fully determined that continued treatment and care is assured. The fact that a man (his continued treatment and care being assured) is being discharged, either at his own request or at the request of the relative or friend, will be noted on the report rendered in connection with the soldier's physical examination prior to discharge. This notation will include the names and addresses of the persons assuming responsibility for such continued treatment and care.

The provisions of paragraph 2, Section II, Bulletin No. 36, War Department, 1918, as interpreted above, will govern both for officers and enlisted or drafted men. In this connection, convalescent centers and development battalions are intended for enlisted or drafted men only.

(*b*) The provisions of paragraph 1, Circular No. 93, War Department, 1918, intend that the cases of all men who have acquired a lower physical standard than that given them when they entered the service, shall be promptly acted upon by the Board of Review in order that men may be discharged immediately after the Board of Review certifies that the maximum improvement has been obtained or that physical disabilities have not been exaggerated or accentuated as a result of service in line of duty. Instructions on page 4, Form No. 135–3, A. G. O., should be harmonized accordingly.

2. During the demobilization of the present army, commanding officers of general hospitals will dispose of patients in such hospitals who are enlisted or drafted men as follows:

(*a*) Men who entered the service since April 1, 1917, and who, after hospital treatment, are fit to return to full duty, will be sent for discharge to the demobilization center nearest their place of entrance into service as indicated in Circular No. 106, War Department, 1918, amended by Circular No. 122, War Department, 1918.

(*b*) Men, without regard to date of entry into the service, who have since become disabled, or who had disabilities prior to their entrance into the service which have been aggravated or made worse by service, said disabilities not being due to their own misconduct, will be transferred to convalescent centers as prescribed in Circular No. 90, War Department, 1918, amended by Circular No. 183, War Department, 1918, providing further benefit can be expected by additional treatment, training, and hardening processes.

(*c*) Men, without regard to date of entry into the service, who have become disabled either prior to or since entry into the service, due to venereal disease, and who need further treatment but do not necessarily require hospital care, will be transferred to the development battalion nearest their place of entrance into service.

(*d*) The cases that can not be benefited by further treatment in hospitals or by transfer to convalescent centers or development battalions, will be discharged on Form No. 17, A. G. O. (Certificate of disability), in accordance with existing instructions. Existing instructions will govern in the discharge of all cases of disability due to their own misconduct.

(*e*) Men who entered the service on or before April 1, 1917, who become fit for full duty, will be returned to their organizations if said organizations belong to the Regular Army and are stationed in this country. All other such men, except those belonging to the Cavalry and those whose branch of service is not represented in the Regular Army, will be sent to the nearest appropriate units of the 8th to 20th Divisions, inclusive, or to the nearest appropriate unit in the Regular Army in the United States not in those divisions. The names of such enlisted men in the Cavalry will be reported to the commanding general, Southern Department, for assignment. Those whose branch of service is not represented in the Regular Army will be sent to the nearest depot brigade. Men of these classes transferred will be assigned or attached to appropriate organizations in their present grades.

(*f*) Commanding officers of general hospitals are authorized to transfer direct the cases enumerated in subparagraphs (*a*,) (*b*), (*c*) and (*e*) above and such other cases as may need treatment which can be given only in another hospital.

3. Whenever Form No. 17, A. G. O., is used in lieu of Form No. 135–3, A. G. O., a carbon copy will be prepared and transmitted to the Bureau of War Risk Insurance, as provided for in paragraph 2, Circular No. 73, War Department, 1918.

4. The designation "oversea convalescent detachments" as provided for in Circular No. 90, War Department, 1918, is hereby changed to "convalescent centers." They will be used as concentration points not only for oversea convalescents but for convalescents from the forces in this country, including the few remaining cases in development battalions whose disabilities are not due to their own misconduct. The quarters selected for convalescent centers should be selected in an attractive part of the camp, and whenever practicable should be near the various welfare centers conducted by the Y. M. C. A., the American Red Cross, and other civilian organizations.

5. In view of the signing of the armistice, and of the above provisions, the necessity for development battalions, as organized under General Orders, No. 45, War Department, 1918, ceases to exist except for the further treatment of venereal cases and for men held for reasons other than physical disability who are awaiting discharge. Experienced personnel no longer needed in development battalions should be utilized in convalescent centers. In this connection, as stated in paragraph 4, Circular 90, War Department, 1918, it is only by thorough cooperation on the part of line and medical officers that the best results can be obtained. The results desired are the maximum restoration of these men in the shortest time possible. Therefore, the assignment to physical drill, exercises, fatigue, the granting of passes or furloughs, etc., should be made only after consultation between the responsible line and medical officers

(*Cir. No. 188, W. D., December 31, 1918.*)

Amendments to Circulars Nos. 90 and 106, War Department, 1918.

1. Paragraph 3, Circular No. 90, War Department, 1918, as amended by Circular No. 183, War Department, 1918, is further amended so as to exclude Camp MacArthur from the list of camps enumerated therein.

2. Paragraph 5, Circular No. 106, War Department, 1918, as amended by Circular No. 122 War Department, 1918, is further amended so as to exclude Camp MacArthur, Tex., and Camp Greene, N. C., from the list of camps enumerated therein.

(*Cir. No. 10, W. D., January 10, 1919.*)

Amendments to Circulars Nos. 90 and 106, War Department, 1918.

1. Paragraph 3, Circular No. 90, War Department, 1918, as amended by Circular No. 183, War Department, 1918, and Circular No. 10, War Department, 1919, is further amended so as to exclude Camp Sevier, S. C., from the list of camps enumerated therein.

2. Paragraph 5, Circular No. 106, War Department, 1918, as amended by Circular No. 122, War Department, 1918, and Circular No. 10, War Department, 1919, is further amended so as to exclude Camp Sevier, S. C., from the list of camps enumerated therein.

(*Cir. No. 33, W. D., January 23, 1919.*)

Amendments to Circulars Nos. 90 and 106, War Department, 1918—Certain Camps Discontinued as Convalescent and Demobilization Centers and Fort Oglethorpe Designated as Demobilization Center.

1. Paragraph 3, Circular No. 90, War Department, 1918, as amended by Circular No. 183, War Department, 1918, and Circulars Nos. 10 and 33, War Department, 1919, is further amended so as to exclude Camp McClellan and Camp Wadsworth from the list of camps enumerated therein.

2. Paragraph 5, Circular No. 106, War Department, 1918, as amended by Circular No. 122, War Department, 1918, and Circulars Nos. 10 and 33, War Department, 1919, is further amended so as to exclude Camp Greenleaf, Ga., Camp Wadsworth, S. C., and Camp McClellan, Ala., from the list of camps enumerated therein, and to add Fort Oglethorpe, Ga., as a demobilization center.

(*Cir. No. 61, W. D., February 6, 1919.*)

Amendments to Circulars Nos. 90 and 106, War Department, 1918—Discontinuance of Certain Camps as Convalescent and Demobilization Centers.

1. Paragraph 3, Circular No. 90, War Department, 1918, as amended, is further amended so as to exclude Camp Beauregard, Camp Hancock, and Camp Logan from the list of camps enumerated therein.

2. Paragraph 5, Circular No. 106, War Department, 1918, as amended, is further amended so as to exclude Camp Beauregard, La., Camp Hancock, Ga., Camp Logan, Tex., and Camp Humphreys, Va., from the list of camps enumerated therein.

(*Cir. No. 81, W. D., February 15, 1919.*)

Amendment of Circulars Nos. 90 and 106, War Department, 1918—Discontinuance of Certain Camps as Convalescent and Demobilization Centers.

1. Paragraph 3, Circular No. 90, War Department, 1918, as amended, is further amended so as to exclude Camp Sheridan, Ala., from the list of camps enumerated therein.

2. Paragraph 5, Circular No. 106, War Department, 1918, as amended, is further amended so as to exclude Camp Sheridan, Ala., from the list of camps enumerated therein.

(*Cir. No. 102, W. D., February 26, 1919.*)

Discontinuance of Camp Pike, Ark., as a Convalescent Center—Amendment to Circular No. 90, War Department, 1918.

Paragraph 3, Circular No. 90, War Department, 1918, as amended, is further amended so as to exclude Camp Pike, Ark., from the list of camps enumerated therein.

(*Cir. No. 230, W. D., May 1, 1919.*)

Camp Kearny Discontinued as Convalescent Center—Amendment to Circular No. 90, War Department, 1918.

Paragraph 3, Circular No. 90, War Department, 1918, as amended, is further amended so as to exclude Camp Kearny, Calif., from the list of camps enumerated therein.

(*Cir. No. 258, W. D., May 15, 1919.*)

DENTAL SERVICE.

Reorganization of Dental Corps.

An act to provide for the promotion of first lieutenants in the Regular Army and National Guard to the grade of captain, and respecting the Dental Corps of the Army and medical and dental students, and for other purposes.]

* * * * * * *

Hereafter the Dental Corps of the Army shall consist of commissioned officers of the same grade and proportionally distributed among such grades as are now or may be hereafter provided by law for the Medical Corps, who shall have the rank, pay, promotion, and allowances of officers of corresponding grades in the Medical Corps, including the right to retirement as in the case of other officers, and there shall be one dental officer for every thousand of the total strength of the Regular Army authorized from time to time by law: *Provided further*, That dental examining and review boards shall consist of one officer of the Medical Corps and two officers of the Dental Corps: *Provided further*, That immediately following the approval of this act all dental surgeons then in active service shall be commissioned in the Dental Corps in the grades herein authorized in the order of their seniority and without loss of pay or allowances or of relative rank in the Army: *And provided further*, That no dental surgeon shall be recommissioned who has not been confirmed by the Senate. * * *

(*Bull. No. 61, War Department, October 23, 1917.*)

Dental Officers' Reserve Corps.

While the Dental Corps is included in the Medical Department for administrative purposes, it has independent functions, and since the act of October 6, 1917 (Public 86, 65th Cong.), makes the personnel of that corps the same as that of the Medical Corps, except as to number per thousand, the Dental Corps is such a corps as should form the basis of an organization in the Officers' Reserve Corps. Subsection 2 of section 1 of Special Regulations 43, War Department, 1917, may properly be amended so as to authorize the commissioning of officers in the Dental Reserve Corps of the Medical Department with the same grades and percentages within the grades as are permitted by law for the Medical Officers' Reserve Corps.

(*Ops. J. A. G. 211.25, November 9, 1917. Bull. No. 72, W. D., December 24, 1917.*)

Instructions Governing Voluntary Enlistments—Amendment to Circular No. 113, War Department, 1919.

Paragraph 5, Circular No. 113, War Department, 1919, is rescinded and the following is substituted therefor:

5. *Enlistment of men for certain special services.*—Men who desire to enlist or reenlist for the Motor Transport Corps, Tank Corps, or Air Service will be enlisted for the Infantry and will be transferred immediately to the service desired for assignment in accordance with the provisions of Circular No. 101, War Department, 1919.

Men who desire to enlist or reenlist for the Construction Division will be enlisted for the Quartermaster Corps and will be transferred immediately to the Construction Division for assignment in accordance with provisions of Circular No. 101, War Department, 1919.

Men who desire to enlist or reenlist in the Veterinary Corps or Dental Corps will be enlisted for the Medical Department and will be transferred immediately to the Veterinary Corps or Dental Corps, respectively, for assignment in accordance with the provisions of Circular No. 101, War Department, 1919.

(*Cir. No. 141, W. D., March 24, 1919.*)

Dental Treatment for Officers and Enlisted Men.

* * * * * * *

II..*Dental treatment for officers and enlisted men on recruiting duty or on duty with units of Reserve Officers' Training Corps.*—When dental treatment is necessary and upon the application of commanding officers of Reserve Officers' Training Corps detachments, or of recruiting officers in charge of main stations, department commanders will order officers and enlisted men from their stations to the nearest Army post or station where an officer of the Dental Corps is stationed for the necessary treatment, and upon completion of treatment to return to their proper station.

Enlisted men ordered on detached service with permanent recruiting parties, Reserve Officers' Training Corps units, or other detached service of a permanent nature will be given a complete dental survey by a dental officer, and, if practicable, any dental disability corrected before his departure. * * *

(*G. O., No. 100, W. D., August 12, 1919.*)

DEVELOPMENT BATTALIONS.

Creation of.

I..1. Under the authority conferred by sections 1, 2, 8, and 9 of the act of Congress "Authorizing the President to increase temporarily the Military Establishment of the United States," approved May 18, 1917, the President directs that there be organized for the period of the existing emergency at each National Army, National Guard, and Regular Army divisional camp, and in such other camps as may be directed by the Secretary of War, one or more development battalions. These battalions will be organized under Table 401, training battalion, Infantry, Series D, corrected to March 22, 1918. The officers authorized herein will be provided as prescribed in the third paragraph of section 1, and by section 9 of the act of May 18, 1917.

2. The functions of the development battalions will be:

(*a*) To relieve divisions, replacement organizations, etc., of all unfit men.

(*b*) To conduct intensive training with a view to developing unfit men for duty with combatant or noncombatant forces either within the United States or for service abroad.

(*c*) To promptly rid the service of all men who, after thorough trial and examination, are found physically, mentally, or morally incapable of performing the duties of a soldier.

3. Development battalions will be under the general supervision of the camp commander. These battalions will be an adjunct of the depot brigades in places where such depots are regularly established.

4. The following procedure in connection with the transfer of men to development battalions will be observed in camps where the establishment of such battalions is authorized:

(*a*) When an enlisted man is inapt or does not possess the required degree of adaptability for military service; or gives evidence of habits or traits of character, other than those for which trial by court-martial should be employed, that render his service in the organization undesirable; or is disqualified for service physically through his own misconduct or otherwise and not subject to immediate discharge on surgeon's certificate, or is an alien enemy, or is an alien who is not a declarant and has been drafted through his ignorance of his rights under the selective-service law, or for any other reasons is not fitted to perform the duties of a soldier at home or abroad, his company or detachment commander will report the facts to the commanding officer, who will appoint a board consisting of one officer, preferably the summary court. The board will determine whether or not the soldier should be transferred to the development battalion. When transfer to the development battalion on account of physical disability is contemplated, a medical officer will be consulted before transfer is recommended. The commanding officer, in case of approval, will forward the proceedings through military channels to the camp commander, requesting that the transfer to the development battalion be made.

(*b*) The camp commander will issue the necessary orders for transfer.

(*c*) For the purposes of this order, such independent commands as are adjacent to and intimately connected with divisional camps or cantonments will be considered a part of such camps or cantonments.

5. As a rule, transfers to the development battalions will be made within one month after men are received in the organizations.

In places where depot brigades are regularly established, men who belong to the classes enumerated in paragraph 4*a*, above, will be transferred directly into the development battalion.

6. Within the development battalions the men will be grouped in classes, depending upon their aptitude and degree of training. Men who, after a thorough trial and examination, show that they can not be trained or can not be utilized in some capacity, will be discharged.

The discharge to be given soldiers under the provisions of this order will, as a rule, be that prescribed by section 3 of paragraph 150, Army Regulations.

7. Men from the development battalions will be discharged by the camp (or depot brigade) commander upon the recommendation of the commander of the development battalion.

Camp and depot brigade commanders are hereby authorized to issue discharges from development battalions by order of the Secretary of War.

8. In posts, camps, or stations where the number of men is not sufficient to warrant the establishment of a development battalion, the classes of men enumerated in paragraph 4*a* will be transferred to the nearest development battalion.

The proceedings of the board recommending transfer will be sent for approval to department headquarters when troops are under the jurisdiction of such commanders, or in cases arising at general hospitals, arsenals, etc., that are within the territorial limits of the department but are ordinarily exempted from the control of the department commander. In this case department commanders will issue the necessary orders for transfer after first ascertaining from the commanding officer under whose jurisdiction the nearest development battalion is placed that accommodations are available. Should such accommodations not be available, report will be made to the War Department for instructions.

9. These instructions are intended to cover all cases arising within the continental limits of the United States. This applies to men returned from abroad and to all branches of the service.

10. Transfers to development battalions will be made within the grades held by enlisted men unless transferred for disability which is the result of their own misconduct; such men should be reduced to privates before transfer.

When the number of noncommissioned officers, cooks, etc., sent to a development battalion exceeds the number provided for in Table 401, training battalion, Infantry, such men will be carried on the rolls of the battalion as extra numbers. Men holding grades, such as saddler, horseshoer, etc., not provided for in Table 401, will also be carried as extra numbers on the rolls of the battalion to which they are assigned.

11. Cases of men whose disposition is not covered by these instructions will be referred to the War Department for necessary action.

12. Enlisted men will not be transferred from development battalions except by War Department orders.

13. The commanding general, American Expeditionary Forces, will issue such instructions as he may deem necessary relative to the disposition within his command of men in the classes enumerated in paragraph 4*a*, above.

14. One month after receipt of these instructions commanders of development battalions will make recommendations with a view to increasing the efficiency of this project. Higher commanders in forwarding these recommendations will add such comment as they see fit.

15. On the last of each month camp or depot brigade commanders will report to The Adjutant General the number and grade of men fitted for duty within their respective development battalions. The report will also state the class of duty for which men are fitted, and whether or not they are suitable for duty abroad.

16. Officers who are placed on duty with development battalions should bear in mind the importance of this work. Success in conserving the man power of the Nation can be attained only through untiring effort and an exercise of good judgment on the part of the officers concerned.

II. Soldiers who have not sufficient knowledge of the English language to enable them properly to perform their duties may be transferred to the development battalions, where instruction to the necessary extent will be imparted. These transfers will be made in accordance with Section I of this order.

(G. O., No. 45, W. D., May 9, 1918.)

Replacing Rated Men.

Paragraph 2 of letter of August 30, 1918, from The Adjutant General of the Army to the commanding generals of all camps and cantonments, in reference to transfer of men from development battalions, File No. 322.051, Development Battalions (Miscellaneous Divisions), reads as follows:

> Steps will be taken to have all rating 1 men in permanent camp organizations replaced by rating 2 and rating 3 men as rapidly as the interests of the service will permit. Rating 1 men thus replaced will be transferred without loss of grade to an organization of the same corps or arm within the same camp destined for oversea service. In case no staff corps organization is present in the camp to which men as provided above may be transferred, they will be reported to the chief of the staff corps concerned, who will assign them elsewhere to organizations designated for oversea service.

The above paragraph is revoked herewith and substitution made therefor as follows:

> Steps will be taken to have all rating 1 men in permanent camp organizations replaced by rating 2 and rating 3 men as rapidly as the interests of the service will permit. Rating 1 men assigned to staff corps organizations thus displaced, will be reported to the chief of the staff corps to which they belong for recommendation as to their disposition.

(*Cir. No. 2, W. D., October 2, 1918.*)

Physical Classes for use of Development Battalions.

1. For the purpose of making the physical classifications used in development battalions correspond, as far as possible, with groups as established under Special Regulations No. 65, the following revision of physical classifications for development battalions is hereby established:

Class A.—Fit for general military service.

Class B.—Deferred remediable; fit for general military service when cured of ....

Class C–1.—Limited service, general; not quite fit physically for general military service, but fit for military service in the Service of Supplies overseas, or general military service in the United States only.

Class C–2.—Limited service, special; fit only for restricted military service in the United States in special capacity approved by medical officer.

Class D.—Unfit for any military service.

2. Table indicating correspondence of various physical classes or groups:

Physical classes established herewith.	Previous physical classes and ratings in development battalions, Document 312.	Physical groups given in Special Regulations No. 65.
Class A	Physical class A, rating 1	Group A.
Class B		Group B.
Class C–1	Physical class B, rating 2 or 3	Group C.
Class C–2	Physical class C, rating 2 or 3	Group C.
Class D	Physical class D	Group D.

3. From the foregoing it will be seen that former physical class B men will hereafter be classified as C–1, and former physical class C men will hereafter be classified as C–2.

4. A new class B is established which is identical with group B described in Special Regulations No. 65.

5. Former ratings will no longer be used and these portions of War Department Document 812 relating thereto are hereby revoked. Form CCP 601 will be continued in use and will be modified in accordance with the above instructions.

6. The classification of all men in development battalions will be done by the closest cooperation between the medical and personnel officers and will be based on the physical, mental, and occupational qualifications of each man.

7. Detailed revision of Instructions Concerning Operation of Development Battalions is in preparation in which foregoing changes will be embodied.

(*Cir. No. 7, W. D., October 8, 1918.*)

Transfer of Men Furloughed from Development Battalions.

Where the indefinite furlough of limited service men from development battalions from extra men attached to United States reserve labor battalions or from depot brigades is authorized, they will be transferred to the United States Army, unassigned, at granting of indefinite furloughs.

(*Cir. No. 53, W. D., November 5, 1918.*)

Transfer of Enlisted Men to Camps Near or Within Their Respective States for Discharge.

The following instructions partially contained in a letter dated November 30, 1918, from The Adjutant General of the Army to certain commanding officers, are published for the information and guidance of all concerned:

1. Under the instructions heretofore or hereafter issued directing the discharge of enlisted men at any camp, post, or station, only those men will be discharged who are within 350 miles of the point of their entrance into the military service, and, in addition, those who are nearer thereto than to any other camp to which they can be sent; provided, also, that men will be discharged at their present station in cases where no substantial saving in distance traveled from point of discharge to point of induction would be effected by transfer to another camp for discharge.

2. All other enlisted men specified in orders for discharge will be formed into detachments consisting of men from the same State and sent for discharge to the camp in or nearest to the State from which they came. A proper proportion of officers, preferably from the same locality, will be sent with each detachment. The commanding officer of the camp, post, or station from which detachments are to be transferred will prearrange all details by wire with the commanding officer of the camps to which the detachments are to be sent, quoting this circular as the authority for the transfer.

3. Each movement will be reported by wire to The Adjutant General of the Army, attention room 336, stating destination and number of men sent.

4. All records and papers required by Circular No. 73, War Department, 1918, of men to be sent to a camp for discharge will be completed as far as possible prior to their departure from the camp from which they are sent.

5. The following camps are designated as demobilization centers and men will not be sent under above instructions to camps other than those listed below:

Camp Beauregard, La.
Camp Devens, Mass.
Camp Dodge, Iowa.
Camp Grant, Ill.
Camp Gordon, Ga.
Camp Hancock, Ga.
Camp Lee, Va.
Camp Logan, Tex.
Camp Custer, Mich.
Camp Funston, Kans.
Camp Greenleaf, Ga.
Camp Kearny, Calif.
Camp Meade, Md.
Camp Sevier, S. C.
Camp Taylor, Ky.
Camp McArthur, Tex.
Camp Pike, Ark.
Camp Shelby, Miss.
Camp Sherman, Ohio.
Camp Wadsworth, S. C.
Camp Jackson, S. C.
Camp Bowie, Tex.
Camp Dix, N. J.
Camp Travis, Tex.
Camp Humphreys, Va.
Camp Lewis, Wash.
Camp McClellan, Ala.
Camp Sheridan, Ala.
Camp Upton, N. Y.
Camp Greene, N. C.

6. The commanding officers of the camps listed are hereby authorized to discharge all men sent under the above authority to their respective camps who, on examination, are found eligible for discharge under general instructions issued by the War Department or under such special instructions as may be issued. They will expedite the discharge of men ordered to the camps for this purpose, and the necessary active supervision will be instituted and maintained to insure a thorough and rapid accomplishment of all work incident to the demobilization of organizations and the discharge of men as ordered.

7. Men transferred to a camp for immediate discharge who are found to be ineligible for discharge by reason of physical disability will be assigned to a development battalion and discharged from the service as soon as they become eligible. A report giving number, reasons prohibiting discharge, and camp, post, or station from which they came will be made promptly to The Adjutant General of the Army, attention room 336.

8. Men sent to a camp for the purpose of discharge will not be placed on guard duty nor on any other duty which will delay their separation from the military service, except in an emergency, and only when no other men are available to perform the duty required.

9. Attention is invited to the provision of War Department Circulars Nos. 73, 75, 77, 81, 82, 83, 85, 86, 90–93, 100–103, and 105.

(Cir. No. 106, W. D., December 3, 1918.)

HABIT-FORMING DRUGS.

Unauthorized Possession of a Punishable Offense.

* * * * * *

IV. The possession by any person subject to military law of any habit-forming drug not ordered by a medical officer of the Army shall be taken and considered as a disorder to the prejudice of good order and military discipline and as conduct of a nature to bring discredit upon the military service, and any such person so offending shall be brought to trial under the 96th Article of War. * * *

(*G. O., No. 25, W. D., March 11, 1918.*)

FOOD DIVISION.

Creation of.

* * * * * * *

V. 1. A Food Division was authorized by the Secretary of War (A. G. O. letter 720.1, Mis. Div., Oct. 16, 1917), to make nutritional surveys of the military camps both in this country and abroad "for the purpose of safeguarding the nutritional interests of the Army (1) by means of competent inspection of food with reference especially to its nutritive value, (2) by seeking to improve mess conditions, and (3) by studying constantly the suitability of the ration as a workingman's diet."

2. This division will hereafter be designated the "Division of Food and Nutrition" of the Medical Department. All provisions of said letter of authorization, except that portion referring to the length of time necessary for a nutritional survey of a camp and the frequency of such surveys, are continued and made applicable to the new designation, and the following regulations pertaining thereto are published for the information and guidance of all concerned:

3. A "nutrition officer" will be designated from the officers of the Medical Corps, Medical Reserve Corps, or Sanitary Corps, by the Surgeon General or by the local commanding officers with the approval of the Surgeon General, for each training camp or post used as a training camp or recruiting camp the strength of which is 10,000 or more.

4. The duties of the nutrition officer shall be:

(*a*) To advise the commanding officer, the camp quartermaster, and the camp surgeon on all matters relating to the composition and nutritive value of foods.

(*b*) To inspect, as directed by the commanding officer, foods and rations in the hands of organizations with reference to nutritive value, freedom from adulteration, spoilage, or deterioration from any cause.

(*c*) To cooperate with the School for Cooks and Bakers, where such schools exist, in the instruction of mess sergeants and mess officers in the fundamentals of nutrition, to wit, purposes served in nutrition by the different foodstuffs (protein, fats, carbohydrates, mineral salts, and vitamines) and the proper construction of dietaries, so as to insure a satisfactory distribution of these nutrients.

(*d*) To assist in the coordination of mess requirements with subsistence supplies, whether carried by the camp quartermaster or purchased locally.

(*e*) To cooperate with and advise the conservation and reclamation officer with reference to the best classification, separation, and disposition of wastes from food.

(*f*) To render directly to the camp commander reports on urgent food matters that require immediate executive action.

(*g*) To report through the camp surgeon on all matters relating to food conditions of the camp as these may affect the nutritional welfare of the troops.

5. The nutritional surveys authorized will hereafter be conducted in such camps and with such frequency as may be deemed necessary by the Surgeon General.

6. Nutrition officers in such number as the exigencies of the service may require, but not to exceed 20 in number, will be appointed from the officers of the Medical Corps, Medical Reserve Corps, and Sanitary Corps for special detail in hospitals, hospital ships, laboratories, or to other departments of the service. The duties of such officers on special detail will be prescribed in orders assigning them to duty.

(*G. O., No. 67, W. D., July 15, 1918.*)

HOSPITAL CONSTRUCTION.

Appropriations for Construction and Repair.

* * * * * * *

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same, and including also all expenditures for construction and repairs required at the Army and Navy Hospital at Hot Springs, Ark., and for the construction and repair of general hospitals and expenses incident thereto, and for additions needed to meet the requirements of increased garrisons, and for temporary hospitals in standing camps and cantonments, $750,000, of which amount not to exceed $25,000 may be used to build a modern hospital at Fort Ward, Wash.; $100,000 to build a modern hospital at Schofield Barracks, Hawaii; $90,000 to enlarge the Walter Reed General Hospital; $90,000 to build a modern hospital at Fort McPherson, Ga.; and $60,000 to build an officers' infirmary at Fort Bayard, N. Mex.: *Provided*, That no building or structure of a permanent nature the cost of which shall exceed $30,000 shall hereafter be erected for use as an Army hospital unless by special authority of Congress.

Quarters for hospital stewards: For construction and repair of quarters for hospital stewards at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same, $25,000. * * *

(*Bull. No. 30, W. D., May 22, 1917.*)

New Hospitals and Enlargements.

* * * * * * *

Not to exceed $25,000 may be used to build a modern hospital at Fort Ward, Wash.; $100,000 to build a modern hospital at Schofield Barracks, Hawaii; $90,000 to enlarge the Walter Reed General Hospital; $90,000 to build a modern hospital at Fort McPherson, Ga.; and $60,000 to build an officers' infirmary at Fort Bayard, N. Mex.: *Provided*, That no building or structure of a permanent nature the cost of which shall exceed $30,000 shall hereafter be erected for use as an Army hospital unless by special authority of Congress. * * *

(*Bull. No. 31, W. D., May 23, 1917.*)

Construction and Repair of Hospitals.

* * * * * * *

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same, and for the construction and repair of general hospitals and expenses incident thereto, and for additions needed to meet the requirements of increased garrisons, and for temporary hospitals in standing camps and cantonments, $2,115,267. * * *

(*Bull. No. 39, W. D., July 7, 1917.*)

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same; construction and repair of general hospitals and expenses incident thereto; additions needed to meet the requirements of increased garrisons, temporary hospitals in standing camps and cantonments; and, during the fiscal year 1918, for the alteration of permanent buildings at posts for use as hospitals, construction and repair of temporary hospital buildings at permanent posts, construction and repair of temporary general hospitals, rental of grounds and rental and alteration of buildings for use for hospital purposes in the District of Columbia and elsewhere, including necessary temporary quarters for hospital personnel, outbuildings, heating and laundry apparatus, plumbing, water and sewers, and road and walks for the same, $35,000,000. * * *

(*Bull. No. 59, W. D., October 19, 1917.*)

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same; construction and repair of general hospitals and expenses incident thereto; additions needed to meet the requirements of increased garrisons, temporary hospitals in standing camps and cantonments; and, during the fiscal year 1918, for the alteration of permanent buildings at posts for use as hospitals, construction and repair of temporary hospital buildings at permanent posts, construction and repair of temporary general hospitals, rental of grounds and rental and alteration of buildings for use for hospital purposes in the District of Columbia and elsewhere, including necessary temporary quarters for hospital personnel, outbuildings, heating and laundry apparatus, plumbing, water and sewers, electric work, cooking apparatus, and roads and walks for the same, $19,654,300. * * *

(*Bull. No. 19, W. D., April 10, 1918.*)

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same; construction and repair of general hospitals and expenses incident thereto; additions needed to meet the requirements of increased garrisons, temporary hospitals in standing camps and cantonments; and for the alteration of permanent buildings at posts for use as hospitals, construction and repair of temporary general hospitals, rental of grounds and rental and alteration of buildings for use for hospital purposes in the District of Columbia and elsewhere, including necessary temporary quarters for hospital personnel, outbuildings, heating and laundry apparatus, plumbing, water and sewers, electric work, cooking apparatus, and roads and walks for the same, including $539.66 on account of the fiscal year 1917, $13,936,554.66. * * *

(*Bull. No. 42, W. D., July 20, 1918.*)

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same, and including also all expenditures for construction and repairs required at the Army and Navy Hospital at Hot Springs, Ark., and for the construction and repair of general hospitals and expenses incident thereto, and for additions needed to meet the requirements of increased garrisons, and for temporary hospitals in standing camps and cantonments. For the alteration of permanent buildings at posts for use as hospitals, construction and repairs of temporary hospital buildings at permanent posts, construction and repair of temporary general hospitals, rental or purchase of grounds and rental and alteration of buildings for use for hospital purposes in the District of Columbia and elsewhere, for use during the existing emergency, including necessary temporary quarters for hospital personnel, outbuildings, heating and laundry apparatus, plumbing, waters and sewers, and electric work, cooking apparatus, and roads and walks for the same, $80,000,000. * * *

(*Bull. No. 43, W. D., July 22, 1918.*)

For construction and repair of hospitals, including the same objects specified under this head in the Army appropriation act for the fiscal year 1919, $86,469,930: *Provided*, That authority is granted to enter into contracts or otherwise to incur obligations for the purposes above mentioned for not to exceed $15,750,000 in addition to the appropriations herein and heretofore made.

The President is authorized, through the Secretary of War, during the existing emergency, from time to time, to requisition or otherwise take over for the United States any lands, including the buildings thereon and their equipment, or any temporary use thereof, required for hospital facilities. He shall ascertain and pay, from the proper appropriation, a just compensation therefor. If the compensation so ascertained be not satisfactory to the person entitled to receive the same, such person shall be paid 75 per cent of the amount so determined, and shall be entitled to sue the United States in the United States district court for the judicial district where the property is situated to recover further sum as, added to the 75 per cent, will make up such amount as will be just compensation: *Provided*, That hospital facilities shall be so situated as to provide for the care of patients as near the place from which they entered the Army or Navy as practicable, and that the facilities shall be in every case in keeping with the number of men in the service from the different States: *Provided further*, That property shall not be taken over under the foregoing power at an aggregate cost in excess of $15,000,000.

All the money hereinbefore designated under the titles "Subsistence of the Army," "Regular supplies, Quartermaster Corps," "Incidental expenses, Quartermaster Corps," "Transportation of the Army and its supplies," "Water and sewers at military posts," "Clothing and camp and garrison equipage," "Horses for Cavalry, Artillery, Engineers, and so forth," "Military post exchanges," "Barracks and quarters, Philippine Islands," "Construction and repair of hospitals," "Shooting galleries and ranges" shall be disbursed and accounted for by officers and agents of the Quartermaster Corps as "General appropriations, Quartermaster Corps," and for that purpose shall constitute one fund.

For new permanent buildings and for additions at the United States Disciplinary Barracks, Fort Leavenworth, Kans., including heating, lighting, plumbing, and other necessary facilities, $300,000. * * *

Bull. No. 59, W. D., November 18, 1918.)

For construction and repair of hospitals at military posts already established and occupied, including the extra-duty pay of enlisted men employed on the same, and including also all expenditures for construction and repairs required at the Army and Navy Hospital at Hot Springs, Ark., and for the construction and repair of general hospitals and expenses incident thereto, and for additions needed to meet the requirements of increased garrisons, and for temporary hospitals in standing camps and cantonments; for the alteration of permanent buildings at posts for use as hospitals, construction and repairs of temporary hospital buildings at permanent posts, construction and repair of temporary general hospitals, rental or purchase of grounds, and rental and alteration of buildings for use for hospital purposes in the District of Columbia and elsewhere, for use during the existing emergency, including necessary temporary quarters for hospital personnel, outbuildings, heating and laundry apparatus, plumbing, water and sewers, and electric work, cooking apparatus, and roads and walks for the same, $5,000,000. * * *

Land for hospital and other purposes: For the purchase of land contiguous to the Walter Reed General Hospital, District of Columbia, 26.9 acres, more or less, for the final location of the Army Medical Museum, the Surgeon General's library, and the Army Medical School, and for the improvements now on the land to be purchased, $350,000. * * *

(*Bull. No. 23, W. D., July 19, 1919.*)

HOSPITAL TREATMENT.

Insane of Army: Appropriation for care. (See also Insane Soldiers.)

On the question submitted as to whether the Surgeon General is authorized to make arrangements with private institutions for the care of insane still in the military service under the appropriations "Medical and Hospital Department," containing an item "for medical care and treatment not otherwise provided for, including care and subsistence in private hospitals, of officers and enlisted men, when entitled thereto by law, regulation, or contract," it being stated that the Government Hospital for the Insane is "taxed to its utmost capacity"; that the patients contemplated to be treated in private hospitals are those who will suffer temporary mental aberrations due to the incidents of trench warfare; that under proper conditions, if treated in psychopathic institutions where they can have the benefits of special provisions therein made for the mentally deranged, they will be wholly restored to normal and to a duty status after a brief period of treatment; and that it is the purpose to send to the Government Hospital for the Insane those whose insanity turns out to be of a more permanent nature.

Held, that the appropriation referred to is broad enough to authorize arrangements for the treatment of insane officers and enlisted men of the Army who, because of the limited facilities of the Government Hospital for the Insane, can not properly be treated there; and that there is no legal objection to making arrangements as proposed for the treatment in private institutions of those temporarily deranged because of the conditions of the service, such action being based on the inadequate facilities of the Government Hospital for the Insane to care for these patients.

(*Ops. J. A. G. 44–200, June 6, 1917. Bull. 17042, July 11, 1917.*)

Civilian Employees: Medical and Hospital Treatment.

Section 9, of the injured-employees' compensation act of September 7, 1916 (39 Stat. 743) provides:

> That immediately after an injury sustained by an employee while in the performance of his duty, whether or not disability has arisen, and for a reasonable time thereafter, the United States shall furnish to such employee reasonable medical, surgical, and hospital services and supplies unless he refuses to accept them. Such services and supplies shall be furnished by United States medical officers and hospitals, but where this is not practicable shall be furnished by private physicians and hospitals designated or approved by the commission and paid for from the employees' compensation fund. If necessary for the securing of proper medical, surgical, and hospital treatment, the employee, in the discretion of the commission, may be furnished transportation at the expense of the employees' compensation fund.

Held, that under this act United States hospitals and facilities are free to injured employees of any department of the Government, and that the appropriations for the various executive departments or other Government establishments or services may not lawfully be reimbursed from the compensation fund provided for injured Government employees unless such treatment was furnished by private physicians or hospitals at the cost of the executive department, establishment, or service seeking reimbursement.

(*Comp. Treas., June 27, 1917. Bull. No. 49, W. D., August 22, 1917.*)

Medical Department: Treatment of Contractors' Employees on Cantonment Construction.

On the question whether there was any objection to the treatment by the Medical Department of the employees of contractors for buildings at cantonments,

Held, that while the functions of the Medical Department are not defined by statute, they are necessarily limited by the terms of appropriations for the support of the Army; that the appropriations for the Medical Department appear to be available only for the medical care and treatment of persons connected with the military establishment and, under authority of the act of September 7, 1916 (39 Stat. 748), of Government employees generally who are injured in the performance of their duty as such employees; and that while the medical care of contractors' employees may be authorized from appropriations for cantonment construction, the limitations on the use of Army appropriations would preclude payments from such appropriations of the necessary expenditures involved.

(*Ops. J. A. G. Bull. No. 54, W. D., September 26, 1917.*)

Medical and Surgical Relief for Injured Civil Employees.

1. The following extracts from circulars issued by the United States Employment Compensation Commission relating to medical and surgical relief for injured civil employees of the United States are published for the information of all concerned; also the specific provisions of Army Regulations governing such medical and surgical relief in Army hospitals and by medical officers of the United States Army:

UNITED STATES EMPLOYEES' COMPENSATION COMMISSION—INSTRUCTIONS RELATIVE TO MEDICAL AND SURGICAL RELIEF FOR INJURED CIVIL EMPLOYEES OF THE UNITED STATES.

WASHINGTON, D. C., *August 22, 1917.*

When civil employees of the United States are injured while in the performance of their duties, they are, by the terms of the Federal compensation act of September 7, 1916, entitled to "reasonable medical, surgical, and hospital services and supplies" for the injury, whether or not disability has arisen.

TREATMENT BY UNITED STATES MEDICAL OFFICERS AND HOSPITALS.

Section 9 of that act provides that, where practicable, such services and supplies shall be furnished by United States medical officers and hospitals. Officers in charge of works where there are United States medical officers and hospitals available for this purpose are requested to inform all employees that such services are available to them in case of injury.

UNITED STATES DISPENSARY SERVICE.

In all cities with a dispensary in charge of a United States medical officer it is desirable, where it is practicable, to have such dispensary furnish as complete medical and surgical service as possible, and to promote this service the commission will pay the necessary car fare of injured employees who are able to return to the dispensary for treatment. In each such case the medical officer at the dispensary is requested to inform the injured employee that treatment will be furnished at the dispensary.

UNITED STATES HOSPITAL SERVICE.

In cities where there is a United States hospital, either owned or under contract to the United States to furnish hospital relief, cases of injury so severe that hospital treatment is required should be transferred as soon as possible to the United States hospital. Arrangements have been made with the United States Public Health Service to furnish medical, surgical, and hospital services or supplies to injured civil employees of the United States.

A list of the out-patient offices and hospitals of the United States Public Health Service is attached for your information and guidance.

In those places where there are United States medical officers, hospitals, or dispensaries other than the United States Public Health Service, and it is practicable to utilize their services for treatment of injured civil employees, the commission should be notified as to this by all United States officers in charge of works upon which civil employees are engaged.

Upon notification the commission will arrange with the proper authorities to utilize such services, provided such arrangements have not already been made.

Identification of Employee to be Treated.

In all cases of injury where it is practicable to utilize the services of any United States medical officer, hospital, or dispensary, the United States officer in charge of the work upon which the employee is engaged at the time of the injury should give the employee a letter of request to the United States medical officer in charge of the hospital or dispensary to identify the said injured employee and as authority for treatment.

In all cases where any treatment by United States medical officers or hospitals can be furnished, the immediate superior officer of the injured employee should notify him at the time of injury that such service can be furnished.

When Medical Bills Will not be Paid.

In all cases where injured employees are offered reasonable medical, surgical, and hospital services and supplies by United States medical officers and refuse to accept them, no bills will be paid to private physicians or hospitals for such services.

All United States officers in charge of work upon which civil employees are engaged are requested to advise the commission as to the medical, surgical, and hospital services which it will be practicable to utilize at their station. This is very necessary in auditing the accounts of private physicians and hospitals for services furnished injured employees.

Procedure Where There are no United States Medical Officers or Hospitals.

In places where there are no United States medical officers, hospitals, or dispensaries, United States officers in charge of works upon which United States employees are engaged are advised not to pay bills for medical, surgical, and hospital services and supplies incurred in cases of injury sustained by United States civil employees while in the performances of their duties. In such places injured employees should be advised to select, for the treatment of their injury, a reputable physician licensed to practice medicine and surgery under the State laws. In selecting such physician they should inform him that the United States Employees' Compensation Commission will settle all reasonable charges, but that settlement will be based upon the minimum rates fixed or obtaining in the locality for patients receiving the average income of United States civil employees, and not the average rates of paying patients in which the wealthy patients are included in the average.

Selection of Physicians.

In places where there are no United States medical officers, hospitals, or dispensaries, the commission, in accordance with the terms of the compensation act of September 7, 1916, hereby approves the selection, by the injured employees, of reputable physicians licensed under State laws to practice medicine or surgery.

Employees Not to Pay Physicians.

Injured employees should be advised not to pay physicians, but to forward the physician's statement to the commission, through the officer in charge of the work on which they are engaged at the time of injury. This officer is requested to forward the physician's statement at once to the commission, Washington, D. C., with his recommendations. Settlement will then be made with the physician by the commission direct.

Selection of Private Hospitals.

In places where there is no United States hospital, or hospital designated by the commission for injured civil employees, and in cases of injury so severe as to require hospital treatment, the injured employee or his representative should be advised to select a reputable hospital for hospital care and nursing at rates for the general ward patients. It will, however, be permissible for the injured employee to obtain service in a private room or ward, provided he will himself pay the difference between the private room or ward rates and the rates fixed for general ward patients.

Private Rooms.

If the condition of the patient is so serious as to require care in a private room, such care will be allowed upon the statement of the attending physician to that effect, but immediately upon recovery from said serious condition such patients should be transferred to the general ward.

The method of payment of hospitals for services will be the same as prescribed above for the payment of physicians.

R. M. Little, *Chairman.*
Mrs. Francis C. Axtell, *Vice-Chairman.*
John J. Keegan, *Commissioner.*

UNITED STATES EMPLOYEES' COMPENSATION COMMISSION—INSTRUCTIONS RELATIVE TO MEDICAL, SURGICAL, AND HOSPITAL SERVICES FOR INJURED CIVIL EMPLOYEES OF THE UNITED STATES.

(Supplemental to Circular of August 22, 1917).

TREATMENT BY UNITED STATES MEDICAL OFFICERS.

WASHINGTON, D. C., *February 1, 1918.*

In all cases where an employee reports at medical office or dispensary requesting treatment, alleging that his condition is due to injury sustained in the performance of duty, a careful examination and a written record should be made of the case and the patient given treatment. If the medical officer feels assured that the case is not one which comes under the compensation law, he should, nevertheless, make a careful physical examination of the employee, and record all the facts and circumstances in the case. As a further safeguard, if the medical officer is not positively assured that the employee is not entitled to the benefits of the law, he should keep the employee under observation and treatment for at least 24 hours, until he does feel positively assured of his diagnosis.

If the medical officer is in doubt as to the validity of the rights to benefits under the law, he should furnish the employee treatment until such time as he positively determines that the employee is not entitled to treatment, or that his condition is not the result of injury sustained while in the performance of duty. When such conclusion is reached, a careful record should be made as to reasons therefor, and an abstract of the record should be forwarded to the commission showing the name, age, sex, occupation, place of employment, date of alleged injury, dates of examinations, and reasons for opinion that the employee was not entitled to the benefits of the compensation act.

The employee should then be discharged from further treatment unless it is mutually satisfactory for the medical officer to continue the treatment without further expense to the commission or to the employee for professional services.

TREATMENT IN HOSPITALS.

1. In all cases where an employee reports in person or by proxy at the office, dispensary, or hospital, requesting treatment on account of disability alleged to be due to injury, and it is found that his disability requires hospital treatment, a careful examination should be made of the employee and his claims for relief, and a record made of all of the findings.

If there is reason to doubt that he is entitled to the benefits of the compensation law, he should be admitted to hospital and given proper treatment until the medical officer in charge of the case definitely determines that he is not entitled to treatment, or that his disability is not due to injury sustained while in the performance of duty. When such conclusion is reached, a careful record should be made of the reasons therefor and an abstract of the record should at once be forwarded to the commission showing the name, age, sex, occupation, place of employment, date of alleged injury, dates of examinations, and reasons for opinion that the employee was not entitled to the benefits of the compensation act. The employee should then be discharged from hospital, unless satisfactory arrangements can be made to retain the employee in hospital without further charge against the commission.

2. Whenever the medical officer is convinced beyond a reasonable doubt that an employee is not entitled to hospital treatment, he should make the same examination, same records, and same reports as provided above, but refuse to admit him to hospital.

3. In all cases refused treatment or discharged from further treatment, the medical officer should take the time necessary to make a full and friendly explanation to the employee of his reasons for the action taken.

4. Whenever an employee applies for treatment with a letter of request therefor from his superior officer, stating that he is a civil employee of the United States, and was injured while in the performance of his duty, the employee should be furnished such treatment as may be required; but if there is reason to believe that he is not entitled to treatment, or that his disability was not due to injury sustained while in the performance of duty, the medical officer should take up the matter with the officer in charge of the work upon which the patient was employed at the time of the injury. If agreement is reached by both that the employee is not entitled to relief, he should be discharged from hospital, unless satisfactory arrangements can be made to retain him in hospital without further charge against the commission.

Records should be kept and reports made of all such cases as provided above. If agreement is not reached, the records should be made, and a complete report of all the findings should then be forwarded to the commission for decision. The employee should receive proper treatment until his discharge is ordered by the commission.

Approved.

R. M. LITTLE,
MRS. FRANCES C. AXTELL,
JNO. J. KEEGAN,
Commissioners.

Army Regulations governing this matter appear in paragraphs 1442 and 1444½ (relating to the Army and Navy General Hospital, Hot Springs, Ark.) and in paragraphs 1459½ and 1461 (relating to Army hospitals proper), as amended and promulgated in changes Army Regulations, No. 70, War Department, 1918, viz:

1442. * * * Civilians employed by the United States in Hot Springs and its vicinity who sustain personal injuries while in the performance of duty will, when beds are available, be admitted to this hospital (the Army and Navy General Hospital) upon the written request of the officers under whom they are employed. This written request will be addressed to the commanding officer of the hospital and will recite the facts of employment and personal injury while in the performance of duty. Injured civilian employees so admitted to this hospital will be furnished medical and surgical care therein for a reasonable time.

1444½. Subsistence and medicine charge will not be collected from injured civilian employees who are admitted to the Army and Navy General Hospital under the provisions of paragraph 1442 and who are not entitled to medical care and treatment at the cost of Army appropriations, but will be billed by the commanding officer direct to the United States Employees' Compensation Commission, Washington, D. C.

The amounts so collected will be accounted for in the regular way, as follows: Subsistence charges, at the rates currently applicable for the subsistence therein of officer patients or of enlisted patients, according as the employee is subsisted on the status of an officer or of an enlisted man; medicine charges at the rate of 25 cents a day.

1459½. Civilians employed by the United States in the vicinity of a permanent or fixed Army hospital who sustain personal injuries while in the performance of duty will be admitted thereto when beds are available, upon the written request of the officers under whom they are employed. Such request will be addressed to the commanding officer of the hospital and will recite the facts of employment and of personal injury while in the performance of duty. Injured civilian employees thus admitted to hospital will be furnished medical and surgical care therein for a reasonable time, provided that this authority is not applicable to cases to which other United States hospitals are more convenient of access.

1461. * * * Subsistence and medicine charges will not be collected from injured civilian employees who are admitted to Army hospitals under the provisions of paragraph 1459½ and who are not entitled to medical care and treatment at the cost of Army appropriations, but will be billed by the commanding officers of the hospitals direct to the United States Employees' Compensation Commission, Washington, D. C. The amounts so collected will be accounted for in the regular way. No other charges will be billed.

(*Bull. No. 18, W. D., April 2, 1918.*)

Discharge of Enlisted Men after Hospital Treatment—Rescission of Circular No. 108, War Department, 1919, and Amendment to Circular No. 188, War Department, 1918.

1. Circular No. 108, War Department, 1919, amending Circular No. 188, War Department, 1918, is rescinded.

2. Subparagraph (*a*), paragraph 2, Circular No. 188, War Department, 1918, is amended to read as follows:

2. (*a*) Men who entered the service since April 1, 1917, and prior to March 1, 1919, who, after hospital treatment, are fit to return to full duty, either will be discharged at the hospital or sent for discharge to a demobilization center, depending upon which point of discharge better insures the soldier's return, after discharge, to the place of induction or enlistment. Commanding officers of hospitals will report men who are to be discharged at the hospital to the commander of the territorial department in which the hospital is located, who will issue the necessary orders for discharge.

The object sought is to facilitate in every way possible the discharged soldier's return to his home before he spends his final pay in near-by towns and thus becomes stranded in a friendless locality.

(*Cir. No. 124, W. D., March 15, 1919.*)

Discharged Soldiers.

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II. *Hospital treatment for discharged soldiers.*—1. Discharged soldiers are civilians under the law, and in the matter of hospital treatment come under the provisions of paragraph 1459, Army Regulations. However, any soldier who has been honorably discharged since October 6, 1917, for disability incurred in line of duty, and whose present condition is a reactivation of that disability or is consequent upon it, is entitled to hospital or sanatorium care under the provisions of the War Risk Insurance act either in military hospital, if there be room for him, or in local civilian institution.

2. If the case is one of emergency, the chief medical advisor of the Bureau of War Risk Insurance should be informed by telegraph of the case, giving the name, rank, and organization from which the man was discharged, the character of the disability, and suggestions as to the treatment needed. The nearest representative of the United States Public Health Service should also be notified, as these officials are authorized to take action in such cases. If there be no representative

of the Public Health Service in the vicinity, arrangements will be made with local physicians or institutions to take temporary charge of the case.

3. If the case is not one of emergency, the information called for in paragraph 2 should be furnished by letter to the chief medical advisor of the Bureau of War Risk Insurance. * * *

(*Bull. No. 12, W. D., March 31, 1919.*)

Retention of Patients in General and Base Hospitals until Eligible for Immediate Discharge—Amendment to circular No. 188, War Department, 1918.

1. In view of the discontinuance of convalescent centers and development battalions as such in many demobilization centers, subparagraph (*a*), paragraph 1, Circular No. 188, War Department, 1918, is amended so as to require commanding officers of general and other hospitals to retain patients in their respective hospitals until maximum improvement is attained, and the patients are eligible for immediate discharge. They will then be disposed of in accordance with the provisions of subparagraph (*a*), paragraph 2, Circular No. 188, War Department, 1918, as amended by paragraph 2, Circular No. 124, War Department, 1919, and paragraph 159, Army Regulations, as changed by C. A. R. No. 64. Such of these men as are transferred to demobilization centers will be so transferred on a duty status and will not be transferred as sick.

Men who are permanently disqualified for military service will not be transferred to demobilization centers but will be discharged at the hospital on Form No. 17, A. G. O., as now prescribed by existing orders and regulations.

2. These instructions are not to be construed as modifying the second part of subparagraph (*a*), paragraph 1, Circular No. 188, War Department, 1918, relating to the discharge of men at their own request or at the request of relatives or friends before maximum improvement is obtained.

(*Cir. No. 342, W. D., July 8, 1919.*)

Disposition of Enlisted Men Falling under the Provisions of Paragraph 2, Circular No. 188, War Department, 1918.

Commanding officers of hospitals where emergency enlisted men are receiving treatment, away from the stations of their organizations, will notify the organization commanders of such soldiers when it has been determined that they will not be returned to their organizations, but will be disposed of in accordance with the provisions of paragraph 2, Circular No. 188, War Department, 1918, as amended by paragraph 2, Circular No. 124, War Department, 1919. The organization commanders concerned will, upon the receipt of such notifications, make application direct to The Adjutant General of the Army for transfer of the soldiers without loss of grade to unassigned in their arms of the service with station at the hospitals where they are receiving treatment. Upon receipt of the proper authority from The Adjutant General of the Army the proper commanding officers will issue the necessary orders to effect such transfers.

(*Cir. No. 441, W. D., September 26, 1919.*)

Discharged Soldiers, Sailors, and Marines.

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II. *Hospital treatment for discharged soldiers, sailors, and marines.*—Paragraph 1, Section II, Bulletin No. 12, War Department, 1919, is amended to read as follows:

1. Discharged soldiers, sailors, and marines are civilians under the law, and in the matter of hospital treatment come under the provisions of paragraph 1459, Army Regulations. However, any soldier, sailor, or marine who has been honorably discharged since October 6, 1917, for disability incurred in line of duty, and whose present condition is a reactivation of that disability or is consequent upon it, is entitled to hospital or sanatorium care under the provisions of the war risk insurance act either in military hospital, if there be room for him, or in local institution. * * *

(*Bull. No. 34, W. D., October 1, 1919.*)

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II. *Hospital treatment for discharged soldiers, sailors, and marines.*—Paragraph 1, Section II, Bulletin No. 12, War Department, 1919, is further amended to read as follows:

1. Discharged soldiers, sailors, and marines are civilians under the law, and in the matter of hospital treatment come under the provisions of paragraph 1459, Army Regulations. However, any soldier, sailor, or marine who has been honorably discharged since October 6, 1917, for disability incurred in line of duty, and whose present condition is a reactivation of that disability or

is consequent upon it, is entitled to hospital or sanatorium care under the provisions of the war risk insurance act in Public Health Service hospital, military hospital, if there be room for him, or in local civilian institution. * * *

(*Bull. No. 37, W. D., November 4, 1919.*)

HOSPITALS.

Fort Bayard, General Hospital.

IV..1. The United States Army General Hospital, Fort Bayard, N. Mex., is established for the treatment of pulmonary tuberculosis in the case of soldiers of the Regular Army and of beneficiaries of the United States Soldiers' Home. Surgical cases of tuberculosis, not accompanied by tuberculosis of the lungs, are not suitable for treatment at this hospital.

2. Discharged soldiers of the Regular Army who are suffering from tuberculosis contracted in line of duty can obtain admission to this hospital only through the Soldiers' Home, Washington, D. C.

3. Soldiers of the National Guard when in the service of the United States and soldiers of the National Army are entitled to treatment at Fort Bayard so long as they are on the status of enlisted men. Upon discharge they are no longer entitled to treatment at that hospital. Discharged men of these two classes should not therefore be advised to go to Fort Bayard for treatment. They are entitled to admission to any of the branches of the National Home for Disabled Volunteer Soldiers, and are advised to apply to the president of the board of managers, National Home for Disabled Volunteer Soldiers, National Military Home, Ohio, for admission.

4. Two rooms are provided by the Quartermaster Corps at a lodging house in Deming, N. Mex., for the accommodation of enlisted patients traveling to or from this hospital who find it necessary to spend the night in Deming. Patients sent to Fort Bayard should be routed by the Quartermaster Corps over the Hanover and Fierro branch of the Atchison, Topeka & Santa Fe Railway to Bayard Station, and not to Silver City, N. Mex.

5. No quarters are available for the wives and families of officers and enlisted men who are sent to Fort Bayard as patients. The nearest hotel is at Silver City. Patients of all classes are directed not to bring their families with them to the hospital.

(*G. O., No. 142, W. D., November 13, 1917.*)

Army and Navy General Hospital, Hot Springs, Rules for Government of.

VIII..The following Executive order amending the Executive order of May 1, 1897, prescribing rules and regulations for the government of the Army and Navy General Hospital, Hot Springs, Ark., as promulgated in General Orders, No. 26, Headquarters of the Army, 1897, is published to the Army for the information and guidance of all concerned:

[Executive order.]

The Executive order of May 1, 1897, prescribing rules and regulations for the government of the Army and Navy General Hospital at Hot Springs, Ark., is amended to read:

The regulations governing admissions to the Army and Navy General Hospital at Hot Springs, Ark., are amended by adding to the classes of persons to be admitted to said hospital honorably discharged soldiers and sailors of the Army and Navy of the United States, including National Guard forces, Naval Militia, volunteers, and drafted or selected men in the service of the United States, under such conditions and regulations as may be prescribed by the Secretary of War.

The regulations cited are further amended so as to authorize the admission to this hospital, when practicable, and for a reasonable time, under such conditions as may be prescribed by the Secretary of War, of civilians employed by the United States in Hot Springs and its vicinity who sustain personal injuries while in the performance of duty.

(*G. O., No. 24, W. D., March 8, 1918.*)

Base Hospitals, Numbering.

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III..In connection with the numbering of base hospitals as prescribed in Section II, General Orders, No. 20, War Department, 1918, all base hospitals now on or destined for oversea service will be numbered serially. All other base hospitals, in the United States or elsewhere, will be designated by the locality in which they are situated as "U. S. Army Base Hospital, Fort Sam Houston, Tex." * * *

(*G. O., No. 35, W. D., April 15, 1918.*)

IDENTIFICATION TAGS.

The Wearing of.

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III. .The War Department is in receipt of a communication from the headquarters, American Expeditionary Forces, reporting the failure of troops arriving on transports to comply fully with orders and regulations relating to the wearing of identification tags, with special reference to sick and deceased persons, in whose cases identification, in many instances, is practically impossible without identification tags.

In order to insure strict compliance with the provisions of paragraph 491, Army Regulations, inspection of troops, with this end in view, will be made at time of embarkation and at frequent intervals en route. * * *

(*G. O., No. 94, W. D., October 19, 1918.*)

IMMUNIZATION OF RECRUITS.

Typhoid.

1. In order to carry out the present policy of the early replacement where possible of men who entered the service for the period of the emergency by men enlisted under the provisions of the act of Congress dated February 28, 1919, the departure of recruits from recruit depots or stations where enlisted, for permanent stations or oversea replacement depots, will be expedited wherever possible.

2. In cases where the completion of the recruit's typhoid immunization at the recruit depot or station where enlisted will delay his departure therefrom, he will be forwarded to an oversea replacement depot or to his permanent station, as the case may be, prior to the completion of the immunization. In such cases this immunization will be completed at the oversea replacement depot or at the station in the United States to which the man is assigned, as the case may be.

3. Attention is directed to paragraph 187, Manual for the Medical Department, as changed by C. M. M. D., No. 6. The provisions of this paragraph are modified so as to prescribe that the duplicate of the incomplete vaccination card will be transmitted with the soldier's service record to the oversea replacement depot or permanent station, as the case may be. Upon its receipt at the oversea replacement depot or permanent station the duplicate will be transmitted to the depot or station surgeon.

(*Cir. No. 285, W. D., June 3, 1919.*)

INSANE SOLDIERS.

Discontinuing the Admission of Insane Soldiers to St. Elizabeths Hospital, Washington, D. C.—Amendment to Circular No. 164, War Department, 1919. (See also Hospital Treatment.

Circular No. 164, War Department, 1919, is amended to read as follows:

Until further orders, no more insane soldiers will be admitted to St. Elizabeths Hospital, Washington, D. C., unless by special authority of the War Department, in exceptional cases. Except as provided herein and in paragraph 470, Army Regulations, all insane cases will be sent to military hospitals specially designated for this purpose by the War Department.

(*Cir. No. 238, W. D., May 2, 1919.*)

INSPECTIONS.

Tactical. (For Sanitary Inspections, see Camps.)

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VI. .Tactical inspections shall be made by members of the Training and Instruction Branch of the General Staff at such times as the Chief of Staff shall direct. These inspections are made with the view of securing uniformity in instruction, adherence to proper training methods, and to assure progress in the training of divisions.

They will be made at the time divisions are first organized, when combined training is about to be initiated, and at such other times as the Chief of Staff may direct. The final inspection for each division to be made just before the organization leaves for port of embarkation.

Inspection of troops of their own arm or staff corps as may be directed from time to time by the chiefs of Field and Coast Artillery, Engineers, Signal Corps, Ordnance, Medical, and Quartermaster Corps shall be made in addition to those provided for above. * * *

(*G. O., No. 74, W. D., August 14, 1918.*)

LEAVE OF ABSENCE, PATIENTS.

For Enlisted Men of the Navy and Marine Corps Convalescing in Army Hospitals.

Commanding officers of hospitals in which enlisted men of the Navy or Marine Corps are convalescing are authorized to grant leave of absence to such enlisted men, and the enlisted men may accept leaves, under the provisions of such of the following Navy Regulations as may be applicable; provided that these regulations do not conflict with existing regulations of the Army concerning enlisted men of the Army, or with regulations that may hereafter be issued:

1. The commandant of a navy yard or station is authorized to grant leave of absence as follows: To officers attached to the yard or station, or serving on board the receiving or station ships, leave not to exceed 10 days, exclusive of travel time; to petty officers and enlisted men attached to the yard or station or serving on board the receiving or station ships, leave in accordance with instructions that may be issued from time to time by the Bureau of Navigation; to enlisted men of the Marine Corps attached to the marine barracks or station, or serving on board the receiving or station ships, furloughs not to exceed 30 days, exclusive of travel time.

2. Leave of absence shall be granted in terms of months and days, as "one month," "one month and 10 days." A leave of absence begins on the day following that on which an officer departs from his station or duty. The day of departure, whatever the hour, is counted as a day of duty; the day of return as a day of absence, except when such return is made before the regular hour for forenoon quarters on board ship or for beginning work at a shore station, in which case it shall not be counted as a day of absence. Leave for one month beginning on the first day of a calendar month shall expire on the last day of the month, whatever its number of days. Beginning on an intermediate day, the leave will expire on the day preceding the same day of the next month.

3. No commanding officer of a ship, fleet, or naval station shall grant permission to any person under his command to leave his station, or to return from abroad to the United States, on account of ill health, except upon the recommendation of a board of medical survey.

4. Requests for leave or detachment on account of ill health, when forwarded to the Navy Department, shall be accompanied by the report of a medical survey.

5. When the sanitary or other conditions of the port do not render it inadvisable, and when authorized by the senior officer present, the commanding officer shall grant liberty or leave of absence to the enlisted men, but such liberty or leave of absence shall not be granted by other than the commanding officer.

6. Leave of absence or liberty shall not be granted to enlisted men who are in debt to the Government unless the full amount of such indebtedness be deposited with the supply officer.

7. Enlisted men shall be instructed that when on leave of absence they must so arrange that they may have sufficient funds to enable them to return to their ships; recruiting officers will not furnish transportation for the purpose.

8. Permission to leave the United States will be granted by the Secretary of the Navy only.

(*Cir. No. 31, W. D., January 21, 1919.*)

LENSES AND FRAMES FOR VISUAL DEFECTS.

Gratuitous Issue.

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VII. During the present emergency lenses for the correction of visual defects, and suitable frames therefor, will, when prescribed by medical officers (or by civilian physicians employed under proper authority), be issued without charge by the Medical Department to all enlisted men who have been definitively accepted for the military service. They will not be issued to recruits who for any reason are about to be discharged from the service.

The soldier's receipt for the lenses and frames will be taken by the issuing officer in each instance, and will be the medical officer's voucher for dropping them from his return of medical property.

Should the lenses or frames be subsequently damaged, lost, or destroyed while in the soldier's possession and without fault on his part, they will be repaired or replaced without charge by the Medical Department. Should they be damaged, lost, or destroyed through fault on the part of the soldier, they will be repaired or replaced by the Medical Department and the cost, repair, or replacement will be collected by stoppage against the soldier's pay. * * *

(*G. O., No. 35, W. D., April 15, 1918.*)

MEDICAL DEPARTMENT.

Appropriations for.

Medical and Hospital Department: For the purchase of medical and hospital supplies, including motor ambulances and motor cycles for medical service, their maintenance, repair, and operation, and disinfectants, and the purchase and exchange of typewriting machines for military posts, camps, hospitals, hospital ships, and transports, and supplies required for mosquito destruction in and about the military posts in the Canal Zone: *Provided*, That the Secretary of War may in his discretion select types and makes of motor ambulances for the Army and authorize their purchase without regard to the laws prescribing advertisement for proposals for supplies and material for the Army; for the purchase of veterinary supplies and hire of veterinary surgeons; for expenses of medical supply depots; for medical care and treatment not otherwise provided for, including care and subsistence in private hospitals of officers, enlisted men, and civilian employees of the Army, of applicants for enlistment, and of prisoners of war and other persons in military custody or confinement, when entitled thereto by law, regulation, or contract: *Provided*, That this shall not apply to officers and enlisted men who are treated in private hospitals or by civilian physicians while on furlough; for the proper care and treatment of epidemic and contagious diseases in the Army or at military posts or stations, including measures to prevent the spread thereof, and the payment of reasonable damages not otherwise provided for, for bedding and clothing injured or destroyed in such prevention; for the pay of male and female nurses, not including the Nurse Corps (female), and of cooks and other civilians employed for the proper care of sick officers and soldiers, under such regulations fixing their number, qualifications, assignment, pay, and allowances as shall have been or shall be prescribed by the Secretary of War; for the pay of civilian physicians employed to examine physically applicants for enlistment and enlisted men, and to render other professional services from time to time under proper authority; for the pay of other employees of the Medical Department; for the payment of express companies and local transfers employed directly by the Medical Department; for the transportation of medical and hospital supplies, including bidders' samples and water for analysis; for supplies for use in teaching the art of cooking to the enlisted force of the Medical Department; for the supply of the Army and Navy Hospital at Hot Springs, Ark.; for advertising, printing, binding, laundry, and all other necessary miscellaneous expenses of the Medical Department, $1,000,000.

Hospital care, Canal Zone garrisons: For paying the Panama Canal such reasonable charges, exclusive of subsistence, as may be approved by the Secretary of War for caring in its hospitals for officers, enlisted men, military prisoners, and civilian employees of the Army admitted thereto upon the request of proper military authority: *Provided*, That the subsistence of the said patients except commissioned officers shall be paid to said hospitals out of the appropriation for subsistence of the Army at the rates provided therein for commutation of rations for enlisted patients in general hospitals, $35,000.

Army Medical Museum and library: For Army Medical Museum, preservation of specimens and the preparation and purchase of new specimens, $5,000;

For the library of the Surgeon General's Office, including the purchase of the necessary books of reference and periodicals, $10,000; in all, $15,000. * * *

(*Bull. No. 30, W. D., May 22, 1917.*)

Artificial limbs: For furnishing artificial limbs and apparatus, or commutation therefor, and necessary transportation, $210,000.

Appliances for disabled soldiers: For furnishing surgical appliances to persons disabled in the military or naval service of the United States and not entitled to artificial limbs or trusses for the same disabilities, $1,000.

Trusses for disabled soldiers: For trusses for persons entitled thereto under section 1176, Revised Statutes of the United States, and the act of Congress amendatory thereof, approved March 3, 1879, $2,000.

Providence Hospital: For the support and medical treatment of medical and surgical patients who are destitute, in the city of Washington, under a contract to be made with the Providence Hospital by the Surgeon General of the Army, $19,000, one half of which sum shall be paid from the revenues of the District of Columbia and the other half from the Treasury of the United States.

Garfield Memorial Hospital: For maintenance, to enable it to provide medical and surgical treatment to persons unable to pay therefor, under a contract to be made with the Board of Charities of the District of Columbia, $19,000, one half of which sum shall be paid from the revenues of the District of Columbia and the other half from the Treasury of the United States. * * *

(*Bull. No. 37, W. D., July 5, 1917.*)

Medical and Hospital Department: For the purchase of medical and hospital supplies, including gas masks, motor ambulances, and motor cycles for medical service, their maintenance, repair, and operation, and disinfectants, and the purchase and exchange of typewriting machines for military posts, camps, hospitals, hospital ships and transports, and supplies required for mosquito destruction in and about the military posts in the Canal Zone: *Provided*, That the Secretary of War may in his discretion select types and makes of motor ambulances for the Army and authorize their purchase without regard to the laws prescribing advertisement for proposals for supplies and material for the Army; for the purchase of veterinary supplies and hire of veterinary surgeons; for expenses of medical supply depots; for medical care and treatment not otherwise provided for, including care and subsistence in private hospitals, of officers, enlisted men, and civilian employees of the Army, of applicants for enlistment, and of prisoners of war and other persons in military custody or confinement, when entitled thereto by law, regulation, or contract: *Provided*, That this shall not apply to officers and enlisted men who are treated in private hospitals or by civilian physicians while on furlough; for the proper care and treatment of epidemic and contagious diseases in the Army or at military posts or stations, including measures to prevent the spread thereof, and the payment of reasonable damages not otherwise provided for, for bedding and clothing injured or destroyed in such prevention; for the pay of male and female nurses, not including the Nurse Corps (female), and of cooks and other civilians employed for the proper care of sick officers and soldiers, under such regulations fixing their number, qualifications, assignment pay, and allowances as shall have been or shall be prescribed by the Secretary of War; for the pay of civilian physicians employed to examine physically applicants for enlistment and enlisted men, and to render other professional services from time to time under proper authority; for the pay of other employees of the Medical Department; for the payment of express companies and local transfers employed directly by the Medical Department for the transportation of medical and hospital supplies, including bidders' samples and water for analysis; for supplies for use in teaching the art of cooking to the enlisted force of the Medical Department; for the supply of the Army and Navy Hospital at Hot Springs, Ark.; for advertising, printing, binding, laundry, and all other necessary miscellaneous expenses of the Medical Department, $29,780,000.

(*Bull. No. 39, W. D., July 7, 1917.*)

Medical and Hospital Department: For the purchase of medical and hospital supplies; gas masks, motor ambulances, and motor cycles for medical service, their maintenance, repair, and operation: *Provided*, That the Secretary of War may, at his discretion, select types and makes of motor ambulances for the Army and authorize their purchase without regard to the laws prescribing advertisement for proposals for supplies and material for the Army; disinfectants; typewriting machines for military posts, camps, hospitals, hospital ships, and transports; supplies required for mosquito destruction in and about the military posts in the Canal Zone; veterinary supplies and hire of veterinary surgeons; expenses of medical supply depots; medical care and treatment not otherwise provided for, including care and subsistence in private hospitals or by civilian physicians while on furlough; for the proper care and treatment of epidemic and contagious diseases in the Army or at military posts or stations, including measure to prevent the spread thereof, and the payment of reasonable damages not otherwise provided for, for bedding and clothing injured or destroyed in such prevention; pay of male and female nurses, not including the Nurse Corps (female), and of cooks and other civilians employed for the proper care of sick officers and soldiers, under such regulations fixing their number, qualifications, assignment pay, and allowances as shall have been or shall be prescribed by the Secretary of War; pay of civilian physicians employed to examine physically applicants for enlistment and enlisted men, and to render other professional services from time to time under proper authority; pay of other employees of the Medical Department; payment of express companies and local transfers employed directly by the Medical Department for the transportation of medical and hospital supplies, including bidders' samples and water for analysis; supplies for use in teaching the art of cooking to the enlisted force of the Medical Department; for the supply of the Army and Navy Hospital at Hot Springs, Ark.; for advertising, printing, binding, laundry, and all other necessary miscellaneous expenses of the Medical Department, $100,000,000.

(*Bull. No. 59, W. D., October 19, 1917.*)

Hospital care, Canal Zone garrisons: For paying the Panama Canal such reasonable charges, exclusive of subsistence, as may be approved by the Secretary of War for caring in its hospitals for officers, enlisted men, military prisoners, and civilian employees of the Army admitted thereto upon the request of proper military authority: *Provided*, That the subsistence of the said patients, except commissioned officers, shall be paid to said hospitals out of the appropriation for subsistence of the Army at the rates provided therein for commutation of rations for enlisted patients in general hospitals, $20,000.

Army Medical Museum: For Army Medical Museum, preservation of specimens, and the preparation and purchase of new specimens, $2,500.

The provision made in the appropriations for the Medical and Hospital Department for the purchase of gas masks shall be deemed and construed, until June 30, 1918, to include the manufacture of said masks and all expenses involved in their factory production except the procurement of factory sites and the pay and allowances of commissioned and enlisted personnel engaged therein. * * *

(Bull. No. 19, W. D., April 10, 1918.)

Artificial limbs: For furnishing artificial limbs and apparatus or commutation therefor, and necessary transportation, $70,000.

Appliances for disabled soldiers: For furnishing surgical appliances to persons disabled in the military or naval service of the United States, and not entitled to artificial limbs or trusses for the same disabilities, $1,000.

Trusses for disabled soldiers: For trusses for persons entitled thereto under section 1176, Revised Statutes of the United States, and the act of Congress amendatory thereof approved March 3, 1879, $2,000.

Providence Hospital: For the support and medical treatment of medical and surgical patients who are destitute, in the city of Washington, under a contract to be made with the Providence Hospital by the Surgeon General of the Army, $19,000, one half of which sum shall be paid from the revenues of the District of Columbia and the other half from the Treasury of the United States.

For repairs to and improvements of the heating, lighting, and power plant of the Providence Hospital, and for each and every purpose connected therewith, $19,950, to be expended under the direction and supervision of the superintendent of the Capitol building and grounds and to be paid one-half out of the Treasury of the United States.

Garfield Memorial Hospital: For maintenance, to enable it to provide medical and surgical treatment to persons unable to pay therefor, under a contract to be made with the Board of Charities of the District of Columbia, $19,000, one half of which sum shall be paid from the revenues of the District of Columbia and the other half from the Treasury of the United States. * * *

(Bull. No. 39, W. D., July 13, 1918.)

For Medical and Hospital Department, for meeting obligations incurred and to be incurred by authority of the deficiency appropriation act approved June 4, 1918, $33,000,000.

(Bull. No. 42, W. D., July 20, 1918.)

Medical and Hospital Department: For the manufacture and purchase of medical and hospital supplies, including gas masks, motor ambulances, and motor cycles for medical service, their maintenance, repair, and operation, and disinfectants, and the purchase and exchange of typewriting machines for military posts, camps, hospitals, hospital ships, and transports, and supplies required for mosquito destruction in and about the military posts in the Canal Zone: *Provided*, That the Secretary of War may, in his discretion, select types and makes of motor ambulances for the Army and authorize their purchase without regard to the laws prescribing advertisement for proposals for supplies and materials for the Army; for the purchase of veterinary supplies and hire of veterinary surgeons; for expenses of medical supply depots; for medical care and treatment not otherwise provided for, including care and subsistence in private hospitals, of officers, enlisted men, and civilian employees of the Army, of applicants for enlistment, and of prisoners of war and other persons in military custody or confinement, when entitled thereto by law, regulation or contract: *Provided further*, That this shall not apply to officers and enlisted men who are treated in private hospitals or by civilian physicians while on furlough; for the proper care and treatment of epidemic and contagious diseases in the Army or at military posts or stations, including measures to prevent the spread thereof, and the payment of reasonable damages not otherwise provided for, for bedding and clothing injured or destroyed in such prevention; for the pay of male and female nurses, not including the Nurse Corps (female), and of cooks, and other civilians employed for the proper care of sick officers and soldiers, under such regulations fixing their number, qualifications, assignment, pay, and allowances as shall have been or shall be prescribed by the Secretary of War; for the pay of civilian physicians employed to examine physically applicants for enlistment and enlisted men, and to render other professional services from time to time under proper authority; for the pay of other employees of the Medical Department; for the payment of express companies and local transfers employed directly by the Medical Department for the transportation of medical and hospital supplies, including bidders' samples and water for analysis; for supplies for use in teaching the art of cooking to the enlisted force of the Medical Department; for the supply of the Army and Navy Hospital at Hot Springs, Ark.; for advertising, printing, binding, laundry, and all other necessary miscellaneous expenses of the Medical Department, $267,408,948. * * *.

Hospital care, Canal Zone garrisons: For paying the Panama Canal such reasonable charges, exclusive of subsistence, as may be approved by the Secretary of War, for caring in its hospitals for officers, enlisted men, military prisoners, and civilian employees of the Army admitted thereto upon the request of proper military authority: *Provided*, That the subsistence of the said patients, except commissioned officers, shall be paid to said hospitals out of the appropriation for subsistence of the Army at the rates provided therein for commutation of rations for enlisted patients in general hospitals, $60,000.

Army Medical Museum and library: For Army Medical Museum, preservation of specimens, and the preparation and purchase of new specimens, $5,000.

For the library of the Surgeon General's Office, including the purchase of the necessary books of reference and periodicals, $20,000. * * *.

(*Bull. No. 43, W. D., July 22, 1918.*)

Medical and Hospital Department: For the manufacture and purchase of medical and hospital supplies, and so forth, including the same objects and under the same limitations specified under this head in the Army appropriation act for the fiscal year 1919, except the manufacture and purchase of gas masks, $30,000,000: *Provided*, That authority is granted to enter into contracts or otherwise to incur obligations for the above purposes for not to exceed $65,000,000 in addition to the appropriations herein and heretofore made. * * *.

(*Bull. No. 59, W. D., November 18, 1918.*)

Medical and Hospital Department: For the manufacture and purchase of medical and hospital supplies, including disinfectants for military posts, camps, hospitals, hospital ships, and transports, for laundry work for enlisted men and Army nurses while patients in a hospital, and supplies required for mosquito destruction in and about military posts in the Canal Zone: *Provided*, That the Secretary of War may, in his discretion, select types and makes of motor ambulances for the Army and authorize their purchase without regard to the laws prescribing advertisement for proposals for supplies and materials for the Army; for the purchase of veterinary supplies and hire of veterinary surgeons; for expenses of medical supply depots; for medical care and treatment not otherwise provided for, including care and subsistence in private hospitals, of officers, enlisted men, and civilian employees of the Army, of applicants for enlistment, and of prisoners of war and other persons in the military custody or confinement, when entitled thereto by law, regulation, or contract: *Provided further*, That this shall not apply to officers and enlisted men who are treated in private hospitals or by civilian physicians while on furlough; for the proper care and treatment of epidemic and contagious diseases in the Army or at military posts or stations, including measures to prevent the spread thereof, and the payment of reasonable damages not otherwise provided for, for bedding and clothing injured or destroyed in such prevention; for the pay of male and female nurses, not including the Nurse Corps (female), and of cooks, and other civilians employed for the proper care of sick officers and soldiers, under such regulations fixing their number, qualifications, assignments, pay, and allowances as shall have been or shall be prescribed by the Secretary of War; for the pay of civilian physicians employed to examine physically applicants for enlistment and enlisted men, and to render other professional services from time to time under proper authority, for the pay of other employees of the Medical Department; for the payment of express companies and local transfers employed directly by the Medical Department for the transportation of medical and hospital supplies, including bidders' samples and water for analysis; for supplies for use in teaching the art of cooking to the enlisted force of the Medical Department; for the supply of the Army and Navy Hospital at Hot Springs, Ark.; for advertising, printing, binding, laundry, and all other necessary miscellaneous expenses of the Medical Department, $4,500,000. * * *.

(*Bull. No. 23, W. D., July 19, 1919.*)

Artificial limbs: For furnishing artificial limbs and apparatus, or commutation therefor, and necessary transportation, $50,000.

Appliances for disabled soldiers: For furnishing surgical appliances to persons disabled in the military or naval service of the United States prior to October 6, 1917, and not entitled to artificial limbs or trusses for the same disabilities, $1,000.

Trusses for disabled soldiers: For trusses for persons entitled thereto under section 1176 Revised Statutes of the United States, and the act amendatory thereof approved March 3, 1879, $1,500.

For an additional amount for repairs to and improvements of the heating, lighting, and power plant of the Providence Hospital, and for each and every purpose connected therewith, $2,000, to be expended under the direction and supervision of the superintendent of the Capitol building and grounds and to be paid one-half out of the Treasury of the United States and one-half out of the revenues of the District of Columbia. * * *.

(*Bull. No. 26, W. D., August 1, 1919.*)

Medical Corps, Eligibility for Appointment to.

* * * * * * *

AMENDING THE NATIONAL DEFENSE ACT, ETC.—That certain sections of the act entitled "An act for making further and more effectual provision for the national defense, and for other purposes," approved June 3, 1916, be, and the same are hereby, amended as follows:

Medical Department: That section 10 of the said act be, and is hereby, amended by striking out the word "farrier" wherever it occurs in said section and substituting therefor the words "stable sergeant"; change the period at the end of the second paragraph of said section to a colon and add the following: "*And provided further*, That any person who at the time of the approval of this act shall be and has been an officer of the Medical Reserve Corps, or contract surgeon, on active duty for 12 years subsequent to 1898, shall be eligible for appointment as first lieutenant in the Medical Corps, subject to examination: *And provided further*, That any officer so eligible who fails to pass the physical examination by reason of disability incurred in line of duty shall be retired with the pay and allowances of a first lieutenant of the Medical Corps. * * *

(*Bull. No. 43, W. D., July 22, 1918, Chapter XVII, p. 60.*)

Increase in.

Increase in Medical Department: That the Medical Department of the Regular Army be, and is hereby, increased by one Assistant Surgeon General, for service abroad during the present war, who shall have the rank of major general, and two Assistant Surgeons General, who shall have the rank of brigadier general, all of whom shall be appointed from the Medical Corps of the Regular Army.

That the President may nominate and appoint in the Medical Department of the National Army, by and with the advice and consent of the Senate, from the Medical Reserve Corps of the Regular Army not to exceed two major generals and four brigadier generals.

That the commissioned officers of the Medical Corps of the Regular Army, none of whom shall have rank above that of colonel, shall be proportionately distributed in the several grades as now provided by law.

That the commissioned officers of the Medical Reserve Corps of the Regular Army, none of whom shall have rank above that of colonel, shall be proportionately distributed in the several grades as now provided by law for the Medical Corps of the Regular Army: *Provided*, That nothing in this act shall be held or construed so as to discharge any officer of the Regular Army or deprive him of a commission which he now holds therein. * * *

(*Bull. No. 43, W. D., July 22, 1918.*)

Appointments in the Medical Corps (Permanent Establishment)—Rescission of Circulars Nos. 346 and 374, War Department, 1919.

1. For the purpose of filling existing vacancies in the Medical Corps, United States Army (Regular), examinations of all eligible applicants will be held on March 15, 1920, in the United States, Philippine Islands, Hawaii, Panama Canal Zone, Porto Rico, France, Germany, and Siberia. Applications for examination from candidates in the military service and stationed in the United States, Hawaii, Porto Rico, and Panama will be addressed, through military channels, to the Sur-

geon General of the Army, Washington, D. C. Applications from candidates in the military service elsewhere will be addressed to the chief surgeon of the force or department. Compliance with provisions of paragraph 786, Army Regulations, is enjoined.

2. The examination will be open (*a*) to persons who have had military service in the World War, and (*b*) to civilians. Persons other than those in the military service must appear for examination without expense to the Government.

3. The present law requires that persons commissioned in the Medical Corps shall be citizens between the ages of 22 and 32 years and that original appointments shall be made in the grade of first lieutenant.

4. The requirement that an applicant for appointment in the Medical Corps, Regular Army, shall have served at least a year postgraduate hospital interne-ship is waived in the case of applicants who have served satisfactorily as commissioned officers for a period of at least one year during the World War.

5. The following data in the order indicated must be furnished by applicants:

(*a*) Name in full. (Initials not acceptable.)

(*b*) Date of birth.

(*c*) Place of birth.

(*d*) Permanent home address.

(*e*) Medical school or schools from which graduated, with dates.

(*f*) Professional experience.

(*g*) If an officer who has served during the emergency, complete statement of military service, setting forth (1) the organizations in which served, with inclusive dates; (2) present organization, if still in the service; (3) grade in which originally appointed; (4) present grade, if still in the service; (5) date, place of discharge, and rank at time of discharge, if no longer in the service.

(*h*) Statement of any service as a contract surgeon in the Medical Reserve Corps, in the Medical Section, Officers' Reserve Corps, or in the Medical Service in Volunteers.

(*i*) In case of alien birth, (1) documentary evidence of naturalization; (2) if naturalized through parent, documentary evidence of father's naturalization and sworn statements from two reputable United States citizens establishing relationship between candidate and his father.

6. Selected applicants will be authorized by proper authority to appear at a designated place for examination. Examining boards will be convened by instructions from The Adjutant General of the Army and will apply such procedure as may be directed by the Surgeon General of the Army. Report of examinations and records thereof will be forwarded to the Surgeon General of the Army.

7. Circular No. 346, War Department, 1919, as supplemented by Circular No. 374, War Department, 1919, is rescinded.

(*Cir. No. 572, W. D., Dec. 27, 1919.*)

Discharge and Assignment of Officers—Amendment to Circular No. 191, War Department, 1919.

Paragraph 6, Circular No. 191, War Department, 1919, is amended by adding the following subparagraphs:

(*e*) Officers of the line assigned to duty with the Medical Department as instructors in general and base hospitals functioning in reconstruction and reeducation of sick and wounded soldiers.

(*f*) Officers of the Judge Advocate General's Department serving outside the office of the Judge Advocate General.

(*g*) Officers assigned to duty under jurisdiction of the Commission on Training Camp Activities.

(*Cir. No. 242, W. D., May 7, 1919.*)

Organizations.

* * * * * * *

V..1. Field hospitals and ambulance companies of the Regular Army will be designated as follows:

Motorized field hospitals and ambulance companies will be odd numbered. Animal-drawn field hospitals and ambulance companies will be even numbered.

2. In order to conform to the above system, the following changes of numerical designation are made:

Field Hospital and Ambulance Company No. 2 become No. 11.
Field Hospital and Ambulance Company No. 11 become No. 2.
Field Hospital and Ambulance Company No. 6 become No. 13.

3. The new field hospital and ambulance companies now being organized as part of the Regular Army are designated as follows:

	Numbers.
At Fort Benjamin Harrison, Ind.:	
Field hospitals—	
Motorized	15 and 17
Animal-drawn	6 and 14
Ambulance companies—	
Motorized	15 and 17
Animal-drawn	6 and 14
At Fort Riley, Kans.:	
Field hospitals—	
Motorized	19 and 21
Animal-drawn	16 and 18
Ambulance companies—	
Motorized	19 and 21
Animal-drawn	16 and 18
At Fort Oglethorpe, Ga.:	
Field hospitals—	
Motorized	23 and 25
Animal-drawn	20 and 22
Ambulance companies—	
Motorized	23 and 25
Animal-drawn	20 and 22
At Leon Springs, Tex.:	
Field hospitals—	
Motorized	27
Animal-drawn	24 and 26
Ambulance companies—	
Motorized	27
Animal-drawn	24 and 26
At Fort Ontario, N. Y.:	
Field hospitals—	
Motorized	29
Animal-drawn	28 and 30
Ambulance companies—	
Motorized	29
Animal-drawn	28 and 30

* * * * * * *

(*G. O., No. 98, W. D., July 26, 1917.*)

1. By direction of the President and under authority conferred upon him by section 3 of "An act for making further and more effectual provisions for the national defense, and for other purposes," approved June 3, 1916, and section 1 of "An act to authorize the President to increase temporarily the Military Establishment of the United States," approved May 18, 1917, the higher organization of the Regular Army of the United States, subject to such modifications as may be announced from time to time, shall be as follows:

(*a*) Each Infantry division to consist of—

* * * One sanitary train of four field hospital companies and four ambulance companies. * * * (*G. O., 101, No. W. D., August 3, 1917.*)

339. *The sanitary train.*—The sanitary train is composed of ambulance companies, field hospital companies, and camp infirmaries. The sanitary train is commanded by the division surgeon, or in his absence, by the senior medical officer of the attached elements, who, upon its release from

the control of the commander of trains, operates it in accordance with orders or instructions received from division headquarters. (*C. F. S. R. No. 3.*) * * *

(*G. O., No. 149, W. D., November 28, 1917.*)

I. .Paragraph 2, Section I, General Orders, No. 115, War Department, 1917, as amended by Section VIII, General Orders, No. 134, and Section XIV, General Orders, No. 139, War Department, 1917, is further amended as follows:

1. In table on page 1, add the following:

Units of organization.	First number of series.			Example of proper designation.
	Regular Army.	National Guard.	National Army.	
Sanitary trains	1	101	301	301st sanitary train.

(*G. O., No. 155, W. D., December 12, 1917.*)

Authorized Personnel for Evacuation Hospitals.

1. The following personnel is authorized for each of the evacuating hospitals for overseas service:

1	lieutenant colonel, Medical Corps.
4	majors, Medical Corps.
12	captains, Medical Corps.
12	lieutenants, Medical Corps.
1	captain or lieutenant, Quartermaster Corps.
3	captains or lieutenants, Sanitary Corps.
1	captain or lieutenant, Dental Corps.
34	Total officers.
1	master hospital sergeant, Medical Corps.
2	hospital sergeants, Medical Corps.
10	sergeants first class, Medical Corps.
20	sergeants, Medical Corps.
5	corporals, Medical Corps.
14	cooks, Medical Corps.
185	privates first class and privates, Medical Corps.
237	Total enlisted.

2. For the purpose of providing the additional personnel made necessary by enlarging the bed capacity of the evacuation hospitals, the following is allowed in addition to that heretofore authorized:

180 majors.
300 captains.
350 first lieutenants.
4,680 enlisted men.

3. The additional officers and enlisted men herein authorized will be provided from time to time as the various evacuation hospitals are actually organized.

(*Second indorsement The Adjutant General's Office to the Surgeon General, May 21, 1918.*)

Enlisted Personnel, Promotion and Reduction.

I. .So much of paragraph 1405, Army Regulations, as provides that a candidate for appointment to the grade of hospital sergeant must have served not less than 12 months as sergeant first class, Medical Department, or sergeant first class, Hospital Corps; and so much of paragraph 35, Manual for the Medical Department, as directs that examinations for promotion to the grade of hospital sergeant be written, are hereby temporarily suspended.

(*G. O., No. 102, W. D., August 4, 1917.*)

First Lieutenants to Grade of Captain.

[An act to provide for the promotion of first lieutenants in the Regular Army and National Guard to the grade of captain and respecting the Dental Corps of the Army and medical and dental students, and for other purposes.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That during the existing emergency first lieutenants in the Medical Corps of the Regular Army and of the National Guard shall be eligible for promotion as captain upon such examination as may be prescribed by the Secretary of War. * * *

(Bull. No. 61, W. D., October 23, 1917.)

1. The act of Congress approved October 6, 1917, entitled "An act to provide for the promotion of first lieutenants in the Regular Army and National Guard to the grade of captain * * *, and for other purposes," provides in part as follows:

That during the existing emergency first lieutenants in the Medical Corps of the Regular Army and of the National Guard shall be eligible to promotion as captain upon such examination as may be prescribed by the Secretary of War.

2. The following regulations thereunder are prescribed for the guidance of all concerned:

(*a*) No first lieutenant of the Medical Corps shall be promoted to the grade of captain without examination.

(*b*) No examination shall be had for the promotion of a first lieutenant under the foregoing law unless he shall, if an officer in the Medical Corps of the Regular Army, have completed one year's continuous service in that corps, or, if an officer of the National Guard, have completed one year's Federal service in the Medical Corps thereof since May 11, 1916.

(*c*) At a suitable time anterior to the expiration of one year's service by any first lieutenant, as above, an examining board will be convened to conduct his examination. The rules and regulations governing the constitution, procedure, and action of examining boards for the promotion of medical officers prescribed in general orders or special regulations therefor, current at the time, will govern also the constitution, procedure, and action of the examining boards hereunder. * * *

(G. O., No. 168, W. D., December 29, 1917.)

REGULAR ARMY AND NATIONAL GUARD.

Enlisted Personnel, Promotions and Reductions.

II..The Surgeon General may authorize the camp surgeon, at such places in the United States as he may hereafter designate, to make promotions and reductions in the enlisted personnel, Medical Department, in the same manner and subject to the same restrictions as are provided for division surgeons by Section IX, General Orders, No. 139, War Department, 1917.

(G. O., No. 66, W. D., July 12, 1918.)

Promotion of Staff Officers.

* * * * * * *

4. *Staff officers.*—When a vacancy exists in a staff corps or department within the territorial limits of the United States in a grade above the lowest commissioned grade authorized by law, such vacancy shall be filled by promotion or assignment on recommendation of the chief of the bureau. When such vacancy exists in a staff corps or department in an expeditionary force, the vacancy will be filled upon the recommendation of the commanding general of the expeditionary force in which the vacancy occurs; and the commander of such expeditionary force may fill such vacancies by temporary appointments or by assignments, subject to the approval of the War Department.

Appointments and promotions in the staff corps, as well as in the line, will be made solely to obtain efficiency. The policy of the War Department is, however, that only for exceptional merit will staff officers be advanced in grade above meritorious contemporaries in the line. * * *

(G. O., No. 78, W. D., August 22, 1918.)

Reenlistment of Noncommissioned Officers.

I..*Reenlistment of noncommissioned officers* (Cir. No. 197, W. D., 1919, as amended by Cir. 344, W. D., 1919).—1. The attention of all concerned is directed to that fact that the provisions of the act of Congress approved March 30, 1918 (Sec. V, Bull. No. 22, W. D., 1918), providing for the restoration to their former grades of enlisted men discharged to accept commissions, are not repealed by the act of Congress approved February 28, 1919 (Sec. II, Bull. 9, W. D., 1919), providing for the resumption of voluntary enlistments. This restoration to former grade will be made in the case of men enlisting for one or three years under this act, just as it was when such men were enlisted for the emergency, provided that they are eligible for such restoration under the act approved March 30, 1918.

2. Paragraph 274, Army Regulations, is construed as authorizing the continuance of the warrant of a noncommissioned officer carried as surplus or unassigned provided he reenlists on the day following that of his discharge, at the place where he was discharged. A noncommissioned officer who reenlists or whose warrant is continued under these circumstances should be informed that reduction in grade may become necessary, depending upon further legislation.

3. Nothing in these instructions will be construed as revoking, suspending, or relaxing such regulations and orders as may require examinations for appointment to noncommissioned grades in the Regular Army. * * *

(*G. O., No. 97, W. D., July 31, 1919.*)

Promotion of Noncommissioned Officers.

* * * * * * *

II. .*Promotion of noncommissioned officers, Medical Department.*—Section IX, General Orders, No. 139, War Department, 1917, and Section II, General Orders, No. 66, War Department, 1918, relative to promotion and reduction of the enlisted personnel of the Medical Department, are rescinded. * * *

(*G. O., No. 20, W. D., October 20, 1919.*)

III. .*Promotion of noncommissioned officers, Medical Department.*—Section II, General Orders, No. 70, War Department, 1917, and Section I, General Orders, No. 102, War Department, 1917, temporarily suspending certain regulations relative to the promotion of noncommissioned officers of the Medical Department, are rescinded. * * *

(*G. O., No. 125, W. D., November 8, 1919.*)

MEDICAL ENLISTED RESERVE CORPS.

Enlistment in.

[An act to provide for the promotion of first lieutenants in the Regular Army and National Guard to the grade of captain, and respecting the Dental Corps of the Army and medical and dental students, and for other purposes.]

* * * * * * *

All regulations concerning the enlistment of medical students in the Enlisted Reserve Corps and their continuance in their college course while subject to call to active service, shall apply similarly to dental students. * * *

(*Bull. No. 61, W. D., October 23, 1917.*)

III. .Under authority conferred by the first sentence of section 2 of the act of Congress approved May 18, 1917, all members of the Medical Enlisted Reserve Corps now in active service and not otherwise assigned will be transferred to the Medical Department, National Army, as of date of this order; those not in active service will be transferred under authority of this order, upon being called to active service. Notation of transfer, and in the case of noncommissioned officers of continuance of warrant, will be made on the individual records of all enlisted men transferred. This authority will not be construed to authorize any enlistments in the Enlisted Reserve Corps in excess of those already authorized.

(*G. O., No. 142, W. D., November 13, 1917.*)

MORALE.

Lectures on Sanitation and Hygiene.

The following is an outline of three lectures in preservation of health, public and private, which the Surgeon General is desirous of having given all soldiers prior to discharge, so that they may carry back into civil life a better understanding of the health measures of the Army and their application to the home and civil community.

It will be noted that these talks are to be given by a medical officer, who will be designated for the purpose by the camp surgeon on application.

While those subjects are both large and important, it is probable that they will ordinarily have to be covered in a total of about one hour, speaking time.

Whether they are handled in a single lecture of an hour or so, or in three lectures of 20–25 minutes each, is a matter to be determined by local convenience.

Memorandum for Brig. Gen. E. L. Munson, General Staff, Chief of Morale Section.

In reply to your memorandum, December 14, with reference to lectures on sanitation and hygiene for men about to be discharged, this office is in full accord with your views as to the extreme importance of impressing upon these men the lessons they have learned while in the service as to personal hygiene and measures of general sanitation for the protection of their immediate environment as carried out by the Army authorities, to the end that civil communities may be benefited by the lessons thus learned during their service.

It is assumed from paragraph 4 of your memorandum that it is desired that this office prepare a syllabus of short talks to be forwarded by you to morale officers in camps. This has been done, and is submitted to you herewith. It seems to be more desirable that the lectures be not written out in full, but that an outline only be submitted for the guidance of medical officers in camps, which will be amplified and presented by the speaker in his own way.

Instructions will be communicated to camp surgeons directing that a specially qualified medical officer be designated by the camp surgeon in each camp to present the matters outlined at such time and place as may be arranged for by the morale officer of the camp.

D. C. Howard,
Colonel, Medical Corps.

SHORT TALKS IN SANITATION.

[A syllabus for the guidance of medical officers in camps.]

Talk I.—General discussion of sanitary matters.

It is desirable that soldiers about to be discharged take with them into civil communities a knowledge of the fundamental principles of sanitation, this knowledge being that which has been obtained by them as a result of their personal experiences in the camp and field while in the military service. The importance of cleanliness of body and surroundings, the danger of overcrowding, of direct contact with communicable diseases, of insufficient ventilation and unnecessary exposure during periods of temporarily impaired vitality should be emphasized and the proper corrective measures made clear to all. The advantages of innoculation against typhoid and paratyphoid fevers, of vaccination for smallpox, of the recognized treatment for the elimination of hookworm, of the desirability of medical attention in cases of chronic malaria should be emphasized, and the possibility and desirability of instituting such measures in civilian communities should be urged. Methods of waste prevention, simple ways of disposing of garbage, refuse, etc., also the means of prevention and destruction of flies and mosquitoes must be considered.

Soldiers about to be discharged should have instilled into their minds the value of their knowledge of sanitary matters to civilian communities and the necessity of their cooperation with the health officers of such communities. In addition, it should be pointed out that each returning soldier will be expected to help mold public opinion in such a manner as to create a demand for the enactment of laws relative to matters of health, and their enforcement, once they are placed upon the statute books.

The following subjects will be considered and amplified as though necessary for a full understanding of the data discussed:

Talk II.—Personal Hygiene.

1. *Food.*—Its composition, the varieties and amount required to maintain health and strength, and the necessity of eating in moderation and at regular hours.

2. *Sleep.*—The amount necessary, the advantages of regularity and the importance of thorough ventilation of the sleeping apartment. Avoiding drafts, the amount of cubic air space considered necessary in health and in disease should be dwelt upon.

3. *Exercise.*—It should be taken regularly and in moderation and only to the point of beginning fatigue. When possible, exercise should be in the open air.

4. *Bowels.*—Daily and proper function of the bowels should be obtained.

5. *Dissipation.*—Excesses of all kinds should be avoided, particularly those of alcholism and venery. The keeping of late hours should be avoided.

6. *Clothing.*—Should be suited to the season, ample in quantity, and satisfactory in quality. It should be kept clean and neat and in proper state of repair. Shoes and socks should be roomy and clean. A few remarks should be directed to the influence of quality (wool, cotton, and linen), color, and texture of clothing upon body temperature.

7. *Personal cleanliness.*—Its importance in the prevention of disease; its effect upon the individual morale; and its æsthetic desirability. Freedom from vermin and the majority of skin diseases depends upon frequent bathing.

8. *Care of the teeth.*—Dental prophylaxis, as seen in the thorough cleansing of the teeth at least twice daily; in semiannual visits to the dentist for the detection and correction of dental deficiencies; and the general care of the mouth are essential for the preservation of the teeth and for the avoidance of many ailments incident to intoxication arising from the absorption of the products of decomposition.

9. *Physical defects.*—Emphasis should be placed upon the advisability of the correction of all remediable physical defects which lower vital resistance, among which defects are diseased tonsils, adenoids, chronic appendicitis, errors of refraction, etc.

10. *Inoculation and vaccination against disease.*—The degree of protection afforded an individual against typhoid and paratyphoid fevers, smallpox, etc., should be made clear. The necessity for reinoculation each three to five years until the age of 45 has been attained should be stated, also that revaccination against smallpox should be made in the face of every exposure and epidemic and at intervals of 7 to 10 years.

11. *Venereal prophylaxis.*—The observance of continence in sexual matters should be urged. Failing this, prompt and thorough use of approved venereal prophylactic measures should be made. The time limit as regards the efficiency of such measures should be understood. The necessity of continuous, extended, and faithfully carried out treatment for all venereal diseases should be especially stressed. Warning should be given against all so-called "cures."

Talk III.—General sanitary measures.

1. *The relation of general uncleanliness, and human and animal excreta to disease.*—Discussion should be had regarding matters of general sanitary police and the disposal of all excreta. The danger of soil and water contamination should be dwelt upon. The necessity of personal cleanliness in such matters should be explained. The construction of fly-proof pit latrines, when latrines are needed, should be advocated.

2. *Plumbing.*—The influence of defective plumbing as regards the preservation of health should be discussed.

3. *Flies—Their relation to disease.*—Make known the rapidity and places of breeding and methods to be instituted for their destruction. The use of flytraps, fly papers, swatters, etc., at home and in stores or wherever food supplies are being handled should be urged. In this connection, the necessity for general sanitary cleanliness should be dwelt upon.

4. *Drinking water.*—Enumerate the diseases ordinarily said to be water-borne. Discuss the ways by which water may be contaminated, directly or indirectly. Dwell upon the influence of the location of wells with respect to cesspools and latrines as a source of contamination. Dilate upon the dangers of common drinking cups as relating to the spread of venereal and other infectious diseases; also seek to impress upon the minds of all the liability of infection by agents of bacillary and amaebid dysenteries.

5. *Garbage disposal.*—The necessity of protection against flies by the use of covers on garbage cans, together with cleanliness of the can, should receive attention. The advantage of having flytraps placed about all garbage cans should be mentioned. Discuss in a general way various practical and simple methods of garbage disposal in use in Army camps which would be suitable in civilian communities.

6. *Communicable diseases.*—Discuss briefly the general principles underlying the spread of all communicable diseases, especially those of the respiratory tract. Emphasize again and again the dangers arising from overcrowding, poor ventilation, direct contamination, and droplet infection in the spread of communicable diseases. Dilate upon the advantage of fresh air, ample floor space, the use of sheets or other articles between the beds of crowded barracks or apartments. Reiterate the value of the protection afforded the individual by inoculations and vaccinations against the diseases previously mentioned. Cover in a brief manner the meaning of the term "carrier" and the especial dangers of having such people as cooks or food handlers; also the necessity of

frequent and thorough inspection of restaurants and other public eating places. Dwell especially upon the dangers of communicating venereal diseases to the innocent members of families by means of towels, drinking cups, and kissing upon the part of those affected.
(*Special Morale Circular, Morale Branch, General Staff, December 31, 1918.*)

MOTOR VEHICLES.

Inscriptions for.

* * * * * * *

(*b*) All motor vehicles owned by the Government and operated exclusively by officers or employees of the Government, for official use in the military service, will have attached to them metal plates bearing an inscription reading as follows:

For the Medical Department { "M. D., U. S. A.
No. ———."

(*Bull. No. 70, W. D., December 13, 1917.*)

Restriction on Use of Motor Vehicles Designed for Overseas.

* * * * * * *

III..Until further instructions, no motor trucks, automobiles, or motor vehicles, such as light repair wagons, ambulances, motor cycles, or such special equipment as machine-shop trucks, gasoline and water tank trucks, field lighting trucks, wireless trucks, photographic trucks, trailers, or motor vehicles of any kind especially designed for oversea use, which have been standardized by the Motor Vehicle Board or had become standard for oversea use previous to the creation of this board, shall be issued for use of the War Department in the United States if such issue conflicts with or is detrimental to overseas requirements and shipments.

The above restriction will not apply to the procurement or issue within the United States of such motor vehicles or motor-driven equipment absolutely necessary for Motor Transport Corps training purposes. * * *

(*G. O., No. 89, W. D., October 2, 1918.*)

Registration of and Marking.

* * * * * * *

V..1. Every motor vehicle now in use or hereafter furnished for use by the Army in the United States, irrespective of staff, corps, or branch of the service to which assigned and for whatsoever purpose, will be registered.

2. The term motor vehicles will be construed to include all bicycles, motor cycles, automobiles, trailers, and trucks. All motor vehicles with cargo carrying chassis are classed as trucks Tractors of a type designed primarily for traction purposes and tanks are excepted by the intent of this classification.

3. To insure uniformity of marking and to permit of systematic identification and control, all United States Army motor vehicles will be painted standard O. D. color (see par. 3964, Manual for Q. M. C.) on or before November 1, 1918. All contracts for motor vehicles in the future will prescribe the standard O. D. color in specifications.

4. All new motor vehicles for use in the United States will have a U. S. A. registration number assigned to them by the M. T. C. at the time the requisition is approved. This number must be painted on the vehicle immediately upon delivery of same to destination and prior to being placed in operation. A full description of the vehicle or vehicles will immediately be forwarded on Form No. 118–A to the Chief, Motor Transport Corps, Washington, D. C.

SYSTEM OF MARKING.

5. Numbers to be assigned by the Motor Transport Corps, preceded by "U. S. A.," shall be stenciled on both sides and rear of each motor vehicle in symbols 4 inches high, excepting trailers and motor cycles, in manner indicated by M. T. C. Form No. 27.

6. M. T. C. Form No. 31 indicates the style and size of marking for passenger vehicles and will be followed in detail.

7. For trailers, numbers preceded by U. S. A., shall be stenciled in symbols, minimum of 1 inch on both sides and rear end of body.

8. For motor cycles, number preceded by U. S. A., shall be stenciled in symbols, minimum of 1 inch high on both sides of gas tank, and on a plate firmly attached to rear mud guard. Side cars to have the same number as motor cycle to which attached, stenciled on door and rear in symbols, minimum 1 inch high. Bicycles shall be stenciled in symbols, minimum 1 inch high, on plate firmly attached to the rear mud guard or back seat, if no mud guard.

9. All stenciling to be done in black.

SYSTEM OF CLASSIFICATION.

10. All motor vehicles will be classified according to type, as follows:

	Type.
Passenger cars (regardless of size or body)	1
Light delivery trucks (1-ton or less capacity)	2
One and one half and two ton trucks	3
Three and four ton trucks	4
Five-ton trucks or over	5
Motor cycles (with or without side cars)	6
Bicycles	B
Motor ambulances (all sizes and makes)	7
Tractors (except caterpillars)	8
Caterpillars	9
Trailers (cargo)	0
Machine-shop trucks (regardless of repair equipment)	00
Kitchen trailers	10
Omnibus cars	20
Balloon winch trucks	30
Service cars (light repair)	40
Disinfectors and fire engines	50
Laboratories (dental trucks, medical laboratories, photo laboratories, sterilizing trucks, etc.)	60
Machine-shop trailers	70

SYSTEM OF NUMBERING.

11. The first numeral will indicate the type. The succeeding numerals will indicate the number of the machine of that type in service or awaiting assignment. (Type 1, machine No. 685, would be U. S. A. No. 1685.)

Examples:

Machine No. 1, passenger car, will be U. S. A. 11.
Machine No. 1, light delivery truck, will be U. S. A. 21.
Machine No. 1, 1½-ton truck, will be U. S. A. 31.

ADDITIONAL MARKINGS FOR MOTOR VEHICLES.

12. In addition to the above every passenger carrying motor vehicle will have stenciled on the doors on both sides, 1½ inches below the number, "For Official Use Only," in letters 1 inch high, with 2 inch capitals. This applies to the rear doors of touring cars and to both doors of roadsters. Motor-cycle side cars will be marked on the front right side in symbols the same size as that prescribed for other vehicles. Motor busses and similar vehicles will be marked with this phrase on the body beneath the seat arm rests.

13. Each motor truck shall have the manufacturer's serial number and the motor number stenciled on each side member of the frame of the chassis in a plainly visible location, with symbols 1 inch high, as follows:

S. 1 2 3 4 5 6
M. 7 8 9 0 1 2

14. All trucks without sufficient length of hood to allow of prescribed system of marking will be conspicuously stenciled on the front part of the body or other superstructure, and in addition, as on quads and F. W. D., will be stenciled with the symbols vertically, to read downward with U. S. A. on the side of the radiator and the numerals on the metal band between the dash and radiator.

15. Each motor-truck cover will bear the same U. S. A. number as the truck to which it belongs. This number will be stenciled on both sides in the center, bottom of symbols 24 inches from hem to cover, in symbols 4 inches high, so as to be plainly visible from the sides.

16. During the present emergency the automobile flags prescribed in paragraph 240½, A. R., will be used only by commanding generals of territorial departments, by Coast Artillery district commanders, and by general officers in the United States not on duty with troops. For all other

purposes flags are superseded by metal markers, 6 inches long and 9 inches wide, painted as below, and hung on the wind shield, also on the rear of the car in such a position as to be illuminated by the tail light, according to the following regulations:

(*a*) To denote that the occupant belongs to the headquarters of the designated organization, hung on the right side of the wind shield:

Division headquarters: Red.
Brigadier headquarters: Blue.

These markers, when displayed, will indicate that the occupant at the time is the commanding general of the organization, one of his General Staff officers, or any other officer of his staff specifically authorized by him to use the headquarters marker.

(*b*) In addition to the headquarters marker, cars occupied by general officers will display a marker hung on the right ride of the wind shield, having the appropriate number of white stars on a red field.

17. The U. S. A. registration number assigned to a motor vehicle establishes its permanent identity and under no circumstances will this number, when once assigned, be changed or transferred to another vehicle without express authority of the Motor Transport Corps. Every change in the status or condition of a given vehicle will be reported direct to the chief, Motor Transport Corps, on M. T. C. Form No. 118–A on the day change is made.

18. Immediately upon receipt of new motor equipment pertaining to the M. T. C., the accountable officer will forward directly to the chief, Motor Transport Corps, Washington, D. C., all data descriptive of the equipment. This data will be submitted on M. T. C. Form No. 118–A in duplicate, in order that proper registration numbers may be assigned the vehicle.

19. So much of paragraph 3254, Q. M. C. Manual, and of Section III, Bulletin No. 70, War Department, 1917, as conflicts with this order is hereby revoked. Paragraphs 257 and 295, A. R., pertaining to public property, will not be construed to mean motor transportation.

(*G. O., No. 91, W. D., October 8, 1918.*)

ORTHOPEDIC WORK OF THE ARMY.

Regulations Governing.

I..1. The following regulations governing orthopedic work of the Army are published for the information and guidance of all concerned.

2. For medical officers in medical officers' training camps: At least three periods of instruction of not less than an hour each is prescribed; such other time may be utilized for the subject as, in the opinion of the commanding officer, is available.

3. For selected medical officers who elect the orthopedic service: This will be a course of intensive instruction in orthopedic surgery for men untrained in this specialty; it will be of about six weeks' duration and will be given in the various universities.

4. For line officers and candidates for commission: A total of at least three hours of instruction in the care of the foot and its coverings, the general principles of body posture, and the simpler facts regarding joint injuries will be given each candidate for commission at officers' training camps, and each officer with troops in the cantonments and in the reorganization camps of the Regular Army.

5. For all enlisted men: At least one hour's practical instruction in the care of the foot and its coverings and the treatment of minor injuries will be given all enlisted men once a month by the surgeon of the organization, under the supervision of the orthopedic department.

6. For selected enlisted men of the Medical Department: A course of instruction will be given these men at all training camps and other stations to fit them for rendering proper assistance in shoe fitting, the care of the feet, and the treatment of minor orthopedic affections. The necessary arrangements shall be made with the surgeon of the station.

7. Inspection and orthopedic examination of enlisted men: Particular attention will be given by medical officers to the condition of the feet at each regular semimonthly physical examination. The orthopedic surgeon on duty will act as consultant in doubtful cases, and will carry out or supervise all orthopedic treatment which may be necessary. Discharge for disability due to an orthopedic affection will not be recommended until a reasonable amount of treatment, surgical or otherwise, has been given by the orthopedic surgeon on duty; if none is on duty, the soldier will be transferred to the nearest station where such service is available.

(*G. O., No. 133, W. D., October 11, 1917.*)

PERSONNEL.

Temporary Appointment.

* * * * * * *

STAFF OFFICERS.

9. When a vacancy exists in a staff corps or department within the territorial limits of the United States in a grade above the lowest commissioned grade authorized by law, such vacancy shall be filled by promotion or assignment on recommendation of the chief of the bureau. When such vacancy exists in a staff corps or department in an expeditionary force, the vacancy will be filled upon the recommendation of the commanding general of the expeditionary force in which the vacancy occurs; and the commander of such expeditionary force may fill such vacancies by temporary appointments or by assignments, subject to the approval of the War Department.

Vacancies in the lowest grade in each staff corps or department will be filled in accordance with law upon the recommendation of the chief of such staff corps or department.

OFFICERS ON DETACHED SERVICE.

10. Commanding officers of expeditionary forces serving abroad, to whom officers detached from tactical units and serving abroad report, will make recommendation as to promotion of such officers.

TERMINATION OF TEMPORARY APPOINTMENTS.

11. All promotions and appointments made as herein prescribed will be subject to examination as to physical fitness only.

(*G. O., No. 132, W. D., October 10, 1917.*)

Discharge of Officers.

1. The President has determined, under the provisions of section 9, act of Congress approved May 18, 1917, that the public service will be promoted by the discharge, as rapidly as their services can be spared, of officers in the United States Army, except those holding commissions of any kind in the Regular Army.

2. Department commanders, commanders of camps not under the jurisdiction of department commanders or of chiefs of bureaus of the War Department, commanders of ports of embarkation, all chiefs of staff corps and departments, including the Chief of Field Artillery and the Chief of Coast Artillery, are authorized and directed to discharge such officers of the line and staff as are under their command as rapidly as circumstances permit.

3. All separations from the service will be by discharge as authorized by law; tenders of resignation will not be received nor considered. Such discharges will be a complete separation of the individual from the military service and will terminate all commissions held by him in the Officers' Reserve Corps or otherwise. All officers should be so informed and should also be informed that, while they are given opportunity to express their desires relative to commission in the Reserve Corps or the Regular Army, the granting of such commissions will be entirely dependent upon their fitness, eligibility, and such vacancies as may be provided by existing or future laws and regulations.

4. Orders received directing the reduction of the enlisted strength of a command will be construed as requiring a corresponding reduction of commissioned strength in the manner provided by these instructions. For the purpose of determining the order of discharge, officers will be arranged into the following classes and discharged in this order:

First. Officers desiring full and immediate separation from the service.

Second. Officers desiring prompt separation from the service and subsequent appointment or reappointment in the Officers' Reserve Corps and whom commanding officers recommend for such appointment.

Third. Officers desiring appointment, if opportunity permits, in the Regular Army and whom commanding officers recommend for such appointment.

5. The following officers will not be discharged under provisions of these instructions:

(*a*) Officers holding commissions in the Regular Army, either on the active list or retired list.

(*b*) Officers in arrest, under charges, or serving sentence of a general court-martial.

(*c*) Officers having had money or property accountability and who have not a clearance therefor.

(*d*) Officers on sick report or in hospital.

(*e*) Officers who for exceptional reasons can not be spared or who, in the opinion of the commanding officer, should not be discharged at this time.

Officers of classes (*b*), (*c*), (*d*), and (*e*) may be discharged when no longer in the status stated.

6. For each officer discharged under these instructions there will be prepared and forwarded to The Adjutant General of the Army such records as are prescribed in Circular No. 73, War Department, 1918. In addition to the records and reports required therein, a report of discharge on Form 150–CPB–GS will be sent separately by registered mail to The Adjutant General of the Army. A copy of this form is being distributed. It will be reproduced locally in sufficient quantity to meet all requirements and will be completed in all respects before forwarding.

7. In addition to the reports required by Circular No. 73 and by paragraph 6 of these instructions, a telegraphic report will be sent daily to The Adjutant General of the Army, attention room 325, giving the following information: The number of officers of each arm or corps, by grades, discharged that day under provisions of this circular. Also a list, giving the full name, rank, organization, arm, staff corps, or department of each officer discharged that day, will be sent daily by registered mail to The Adjutant General of the Army, attention Commissioned Personnel Branch.

8. The following form of order will be used in discharging officers under these instructions:

By direction of the President, and under the provisions of section 9, act of Congress, May 18, 1917, and Circular No. 75, War Department, 1918, Captain John Doe, Infantry, is honorably discharged from the service of the United States, for the convenience of the Government, to take effect this date, his services being no longer required.

9. It is the intention to issue Reserve Corps commissions in general to those officers who have served with credit to themselves during the war and who desire such commissions. Care should be exercised therefore in the entries and recommendations on Form 150–CPB–GS to insure justice to the individual and to the Government. In case they desire to do so, applicants for commission in the Reserve Corps or Regular Army will be permitted to append to Form 150–CPB–GS copies of letters from military superiors setting forth specially meritorious service or action.

10. In connection with these discharges attention is directed to the following:

(*a*) Section 9, act of May 18, 1917. (See page 11, Bulletin No. 32, War Department, 1917.)

(*b*) Sixth paragraph, section 37, act of June 3, 1916. (See page 59, Special Regulations No. 43.)

(*c*) Act of March 2, 1901, relative to travel allowances. (See paragraph 684, Military Laws of the United States, 1915.)

(*d*) Act of March 30, 1918, relative to restoration of enlisted men to former grades. (See Section V, Bulletin No. 22, War Department, 1918.)

(*e*) Memorandum of Judge Advocate General, August 30, 1917. (See paragraphs 3, 4, and 5, page 22, Bulletin No. 72, War Department, 1917.)

(*f*) Opinion of the Judge Advocate General, 241.5, March 30, 1918. (See page 23, Digest of Opinions, March, 1918.)

11. Prompt compliance with instructions contained herein is directed.

(*Cir. No. 75, W. D., November 20, 1918.*)

Discharge of Enlisted Men.

The following instructions, communicated by telegraph to certain commanders on November 18, 1918, are published for the information and guidance of all concerned:

Under orders issued or that hereafter may be issued for the discharge of enlisted men the following will be strictly observed:

1. (*a*) Only men who voluntarily enlisted to serve during the emergency and those who were drafted or inducted to serve during the emergency will be discharged.

(*b*) No man will be discharged who at the time of physical examination prior to discharge is unfit for duty in the class in which he was rated at the time of entrance into the service (namely, class A, class C–1, or class C–2) or in a higher class in case he has been subsequently so rated.

(*c*) Men suffering from venereal diseases will not be discharged until cured. Intensive treatment of all venereals will be undertaken at once with a view to their cure and discharge at the earliest possible date.

2. Men from the same localities will be discharged, as far as possible, on the same date and only as they can be moved by railroads. Ample advance notice will be given to the local representative of the United States Railway Administration of the number, date of discharge, and destinations of men to be discharged.

3. A weekly report as of Saturday midnight will be made to The Adjutant General of the Army, attention room 528, showing the number of men discharged that week.

4. Attention is directed to Circulars Nos. 73, 75, and 85, War Department, 1918.

(*Cir. No. 86, W. D., November 25, 1918.*)

Interpretation of Instructions Concerning Discharge of Enlisted Men.

In connection with Circular No. 86, War Department, 1918, the following is published for the information and guidance of all concerned:

1. No class C–1 and C–2 men, nor men under treatment or physical training, will be discharged until the Board of Review (p. 4, Form No. 135–3, A. G. O.) certifies that the maximum improvement has been obtained or that physical disabilities have not been exaggerated or accentuated. Intensive treatment and training of all men thus held will be immediately undertaken and continued in order that their care or maximum improvement and subsequent discharge may be accomplished in the shortest possible time, thus reducing the compensable cases to a minimum.

2. All men, except those inducted for special and limited service only, whose service records are incomplete or for whom there are no other available records in camp showing their physical classification at the time of induction into service, will be considered as of physical class A at the time of induction.

3. Men who have acquired a lower classification, due to their own misconduct, or other venereal cases which, in the opinion of the Board of Review, are incurable or which will take a long or indefinite time to cure, should be discharged as soon as the danger of carrying infection is eliminated. All other cases of disabilities due to their own misconduct should be discharged as soon as their physical condition will permit.

4. Present regulations concerning discharge on certificate of disability are not changed by the aforesaid instructions.

5. Instructions to discharge enlisted men should not be construed so as to prevent the retention in the service of enlisted personnel necessary to carry on the functions of the essential organizations.

(*Cir. No. 93, W. D., November 27, 1918.*)

Discharge of Officers.

1. Paragraph 2, Circular No. 75, War Department, 1918, authorizes certain commanders to discharge from the military service officers of the line and staff holding temporary appointments only whose services are no longer required. In the application of these instructions the following will govern:

(*a*) For the purpose of discharge of officers or for the purpose of reassignment to make officers available for discharge, all officers of the line and staff serving within the territorial limits of a department are placed under control of department commanders with the following exceptions:

(1) Officers on duty at the divisional camps and cantonments exempted from control of department commanders by General Orders, No. 137, War Department, 1917, and Section IV, General Orders, No. 19, War Department, 1918. Such camps and cantonments embrace all units, establishments, and utilities in their immediate vicinity and closely associated with them.

(2) Officers on duty or casuals at ports of embarkation or debarkation, such posts including all units, establishments, and utilities in their immediate vicinity and closely associated therewith.

(3) Medical officers on duty at general hospitals.

(4) Officers on duty at camps or stations which are under direct control of the chief of a staff corps or a bureau chief of the War Department.

(5) Officers on duty at arsenals and other ordnance establishments.

(6) Officers on duty under the Provost Marshal General's office.

(*b*) Staff officers of those commanders having authority to discharge officers are charged with making recommendations to their commanders relative to discharge or reassignment of officers holding commissions in the staff corps and departments. The chief of each staff corps and department will transmit to staff officers of those commanders having authority to discharge such information as will cause discharges of officers to be made for the best interests of the service without necessity for referring individual recommendations for discharge to the chief of a staff corps.

(*c*) Officers on duty with units of the Students' Army Training Corps will be discharged by department commanders on recommendation of Students' Army Training Corps district headquarters. Officers on duty at Students' Army Training Corps district headquarters will be discharged by department commanders when discharge is approved by the chairman, Committee on Education and Special Training, War Department, Washington, D. C.

(*d*) Medical officers on duty at general hospitals will be discharged by the Surgeon General. Officers who are patients in general or other hospitals not at a military camp or station will, when further treatment is unnecessary, be physically examined at such hospital, the examination being recorded on Form No. 395–1, A. G. O. Officers' qualification card, Form No. 395–1 and Form No. 150–CPB–GS, filled out by the officer, will then be sent by the commanding officer of the hospital to the nearest department, camp, or port commander having authority to order discharge of officers. The commander receiving the above report will either discharge the officer or order him to report for duty, according to circumstances in each case. So much of Circular No. 75, War Department, 1918, as prevents discharge of officers in hospital is amended accordingly.

(*e*) Officers on duty at Air Service training or experimental stations and Air Service repair depots will be discharged by the Director of Military Aeronautics.

(*f*) Officers of the Coast Artillery Corps will be discharged by department commanders upon recommendation of the Coast Artillery district commander or the commanding officer Coast Artillery training center.

2. Paragraph 2, Circular No. 75, War Department, 1918, is so amended as to authorize and direct the Provost Marshal General to discharge officers holding commissions for the period of the emergency only who are serving under the office of the Provost Marshal General.

3. In the interpretation of paragraph 1, Circular No, 75, War Department, 1918, officers who at any time prior to publication of General Orders, No. 73, War Department, 1918, held temporary commissions in the Regular Army will not be considered as holding commissions of any kind in the Regular Army and may be discharged. Retired officers holding emergency commissions do hold commissions in the Regular Army and will not be discharged under Circular No. 75, War Department, 1918, from any commission held by them; recommendations for discharge in such cases will be forwarded to The Adjutant General of the Army.

4. Subparagraph (*b*), paragraph 5, Circular No. 75, War Department, 1918, provides that officers in arrest, under charges, or serving sentence of a general court-martial will not be discharged under provisions of that circular. Commanding officers will forward without delay to The Adjutant General of the Army, through military channels, a report of each such case now existing or that may occur in future, setting forth the circumstances in full, and making such recommendation relative to the disposition of the case as is considered for the best interests of the service.

5. Subparagraph (*c*), paragraph 5, Circular No. 75, War Department, 1918, states that officers having had money or property accountability and who have not a clearance therefor will not be discharged. The clearance therein referred to is not a final clearance as a result of final auditing and acceptance of property or fund returns; it is such clearance as the local commander considers reasonable protection to the Government in view of the provisions of the ninety-fourth article of war. In general, if an officer can account to his commanding officer for property or funds of which he has been custodian by receipts of successors or others to whom funds or property have been transferred or by rendition of a final return, he has a sufficient clearance to be available for discharge. Final payments of such officers are governed by the provisions of Circular No 85, War Department, 1918. An officer may be available for discharge but not entitled to receive his final pay.

6. The selection of and statement in the discharge order of a future date when the discharge will be effective is authorized and recommended in those cases where the station of the officer is other than that of the officer issuing the discharge order. This authority as well as the date on which a discharge is effective are set forth in XIII D 9a, page 451, Digest of Opinions of the Judge Advocate General, 1912.

7. Where the station of an officer to be discharged is other than that where the order is issued the appendix to file record card should be held at the officer's station until the order for discharge is received. Acknowledgment of receipt of notice of discharge should then be noted thereon as required by paragraph 6, Circular No. 73, War Department, 1918, and the card then forwarded to accompany other records required by Circulars 73 and 75.

8. Should there be no officer's qualification card at the station of the officer or at the office authorized to discharge, a new qualification card will be made out to accompany the records to be forwarded to The Adjutant General of the Army, as required by paragraph 3, Circular No. 73, War Department, 1918.

9. Attention is directed to the fact that reports required by Circular No. 73, War Department, 1918, are to be furnished in all cases of separation from the service. Such reports are required, no

matter from what source the order for discharge or acceptance of resignation may be issued. The requirement of Circular 73, that the records forwarded contain a copy of the authority for discharge, will be best met in all cases by forwarding a copy of the order separating the officer from the service.

10. Paragraph 150, Army Regulations, provides that discharge certificates will be used for discharge of enlisted men and for no other purpose. Officers should be given as evidence of discharge a copy of the order separating them from the service.

11. Whenever under instructions contained in Circular No. 106, War Department, 1918, detachments of enlisted men are sent to camps or posts designated as demobilization centers for the purpose of being discharged near their homes, officers not to exceed 1 officer to each 25 men may be sent with such detachments. The officers sent with such detachments should be available for discharge upon reaching the demobilization center, and officers who will upon discharge at such center be entitled to travel pay for a less distance than if discharged at station from which sent.

(*Cir. No. 124, W. D., December 7, 1918.*)

Discharge of Personnel of Staff Corps Attached to Line and Other Organizations.

In all cases where line or other organizations are ordered demobilized and the personnel therein discharged, it is intended that the personnel of the Medical Department and other staff corps attached to such organizations will be discharged from the service in proportion to the discharge of the personnel of the organizations to which attached.

These instructions will not be construed as modifying Circular No. 91, War Department, 1918, relative to the discharge of personnel detachments.

(*Cir. No. 187, W. D., December 30, 1918.*)

Control of Discharge of Personnel.

1. Department commanders and commanding officers of camps, posts, or stations not under the jurisdiction of department commanders are authorized to take final action in the cases of all men under their command which come under the provisions of Circular No. 77, War Department, 1918, as amended.

2. When such men belong to an organization of a staff corps or department, the commanding officers of such organizations will be consulted and due consideration will be given to their recommendations as to whether or not such men can be spared.

3. Department commanders and commanding officers of camps, posts, or stations not under department commanders, are charged with the responsibility of reducing the personnel of their respective commands under current general and special War Department instructions. In this connection they will consult zone supply officers and the other proper representatives of staff corps and departments with reference to the discharge or disposition of men whose duties are performed under the supervision of such representatives. The needs of each staff corps and department will receive due consideration.

4. The attention of all is again directed to the importance of discharging from the military service, as rapidly as they can be spared, all men drafted or enlisted only for the period of the emergency. The principles of Circular No. 77, War Department, 1918, as amended, will be observed as a guide in determining the order of merit of men for discharge in organizations in which a certain number of men must be retained, but the lack of reasons for discharge under that circular will not operate to prevent the discharge of a man who can be spared, who desires discharge, and who otherwise is eligible therefor.

5. In case it becomes necessary to utilize any camp, post, or station for storage or other appropriate staff corps purposes, to an extent which will require the retention of men or an increase to a specified number of men in any staff corps or department organization, beyond the number required for the normal operation of the camp, post, or station during demobilization, the chief of the staff corps or department concerned will communicate this fact, and his recommendations with reference to personnel, through The Adjutant General of the Army to the department, camp, post, or station commander concerned.

(*Cir. No. 152, W. D., March 28, 1919.*)

Physical Eligibility of Enlisted Men of Regular Army for Furlough to the Reserve.

1. Only those men will be furloughed to the Reserve under the provisions of Circulars Nos. 16 and 35, War Department, 1919, who are physically eligible for discharge under the provisions of

subparagraphs (*b*) and (*c*), paragraph 1, Circular No. 86, War Department, 1918, and Circular No. 93, War Department, 1918.

2. Men eligible for furlough to the Reserve under the provisions of Circulars Nos. 16 and 35, War Department, 1919, but who are physically ineligible under the provisions of Circulars Nos. 86 and 93, War Department, 1918, will, if their disabilities are curable, be furloughed to the Reserve when cured. Men suffering from incurable disabilities will be discharged on surgeon's certificates of disability when the points of maximum improvement in their cases are reached.

(*Cir. No. 247, W. D., May 10, 1919.*)

Discharge of Officers Holding Emergency Commissions.

1. Appropriations for the support of the Army require that a peace-time basis of commissioned personnel under provisions of the national defense act (Bull. No. 16, W. D., 1916) be reached by September 30, 1919. On or before that date all officers holding commissions for the emergency only are to be discharged, and all officers of the permanent establishment are to be discharged from their emergency or temporary commissions.

2. The commanding generals of all departments and ports of embarkation, the chiefs of all staff corps and departments, and the commanding officers of all posts and camps not under command of a department commander or the chief of a staff corps or department will take immediate action to reduce the need for commissioned personnel and to cause the discharge as rapidly as possible of officers under their jurisdiction holding commissions for the emergency only. Existing Tables of Organization will not be adhered to and commissioned personnel will be reduced to the minimum required for the performance of necessary duties.

3. For the time being reassignment and discharge of officers will be carried out under existing instructions in order to permit a reasonable period for readjustment. Attention is directed to the fact that Class III officers and the Class I and II officers enumerated in paragraph 6, Circular No. 191, War Department, 1919, as amended by Circular No. 242, War Department, 1919, are not to be discharged until they have been reported surplus and a reply to such report received. Such reports of surplus officers will be made by wire to The Adjutant General of the Army (attention room 327).

4. Officers will be assigned by the War Department only on requisitions received. Requisitions for officers will be cut to a minimum and will be only for officers absolutely necessary to replace emergency officers to be discharged. Necessary requisitions will be submitted immediately by wire to The Adjutant General of the Army (attention room 327) and supplemented by a more detailed written statement. Additional requisitions will be submitted from time to time as circumstances require.

5. Emergency officers when discharged hereafter will be given the following option with respect to the place of discharge:

(*a*) Immediate discharge at the station at which they are serving, or if not serving at a military station, at the nearest station having facilities for physical examination.

(*b*) Being ordered to the demobilization center nearest their bona fide homes for immediate discharge upon arrival. Whenever practicable such officers will be sent with detachments of troops. When no such detachments are being sent within a reasonable time, officers may be directed to proceed without troops, the travel being necessary in the military service.

(*c*) Upon their ceritficate that leave of absence is necessary to secure employment, officers may be granted leave of absence for not to exceed 15 days, at the expiration of which they will report to the demobilization center nearest their homes for immediate discharge. Such journeys must be performed on a leave status and at the officer's own expense. In no case will such leaves of absence expiring later than September 25, 1919, be granted.

Officers enumerated in paragraph 2 of this circular will issue all orders necessary to carry out the provisions of this paragraph.

6. When such action will expedite discharge, chiefs of staff corps and departments are authorized to issue orders relieving emergency officers from duty under their jurisdiction and directing such officers to report to the nearest department headquarters or demobilization center for discharge. Officers so reporting will be promptly discharged.

7. Hereafter leaves of absence will not be granted to officers holding commissions for the emergency only except as provided in paragraph 5, or in exceptional circumstances of illness in the immediate family or other distress. In the latter case leaves not to exceed one week may be granted. Wherever practicable such leaves will be avoided by discharge of the officer.

8. Instructions have been issued for the immediate filling of vacancies in the permanent Medical Corps. Emergency medical officers who apply for examination for immediate appointment in the permanent establishment will not be discharged until the results of their applications and examinations are known.

9. Existing instructions relative to the application and examination of officers for future examination for the appointment in the permanent establishment will continue in effect, with the exception that the placing of an officer in Class III will not operate to retain him in service beyond the time that his services can be spared nor in any case beyond September 30, 1919. The attention of all officers who are applicants for appointment in the permanent establishment is directed to subparagraph (*f*), paragraph 4, Circular No. 148, War Department, 1919. The condition mentioned in that paragraph has been reached and the War Department is without option in the discharge of these officers and requests for individual exceptions can not receive consideration. It is desired that all Class III officers upon discharge request appointment in the Officers' Reserve Corps as well as in the permanent establishment. Such requests for appointment in the Reserve Corps will receive prompt consideration and will not in any way affect the application for appointment in the permanent establishment.

10. Orders for the discharge from their emergency commissions of officers of the permanent establishment and orders for the relief of retired officers from active duty will be issued only by the War Department.

11. Resignations of officers of the permanent establishment should cover all commissions held by them and should be forwarded to the War Department. In view of the great need for officers, resignations will be accepted only for good reasons. Commanding officers in forwarding resignations will make recommendation and will state whether or not the officer can be spared without immediate replacement.

(*Cir. No. 350, W. D., July 12, 1919.*)

PHYSICAL EXAMINATIONS.

Examination of Troops at Ports of Embarkation, to Detect Communicable Diseases.

Troops arriving at ports of embarkation will be given a careful physical examination before they are placed aboard transports. This examination will be made by medical officers, the men being stripped to the waist, and extreme care will be taken to detect communicable diseases in their earliest stages. No men having, or suspected of having, a communicable disease will be allowed to embark. Scarlet fever, cerebrospinal meningitis, and measles contacts will be held in quarantine and will not be permitted to embark. Every endeavor will be made to eliminate cases of communicable diseases and suspects from commands before sending them overseas. Troops awaiting overseas service at ports of embarkation will be inspected daily by a medical officer with a view to the early elimination of cases of communicable disease.

(*Telegraphic instructions from The Adjutant General of the Army to commanding generals ports of embarkation. January 5, 1918.*)

Cases for Domestic Service.

Hereafter all cases sent before the surgeon to be examined with a view to discharging them on surgeon's certificate of disability, and who come under the heading of border-line cases, will not be discharged, but their service record will be indorsed "Fit for domestic service only."

Only such cases will be held to service in the United States for such work as they may be capable of performing.

(*Cir. Letter from The Adjutant General of the Army, April 2, 1918.*)

Excessive Losses of Men While in Training.

It has been the experience in the past that coincident with orders directing divisions to prepare for overseas service there begins a process of "sluffing off" men for various reasons. These men have been in training for many months when, on the eve of their departure, they are eliminated. The evil of this may need only be mentioned to be appreciated, for not only has this training been wasted, but there is a loss in money, food, and clothing.

Every effort should be made to remedy this evil. Therefore all physical examinations, while in the service, must be according to a flexible but uniform standard, whereby all subjects permanently unfit for overseas active service will be promptly eliminated, retaining only such as give promise of development into fit soldiers for abroad. This applies from the man's first examination in the depot brigade to the last examination prior to sailing.

You will take immediate steps to convey proper instructions to all medical examiners to carry out the above.

(*Letter from The Adjutant General of the Army to the Surgeon General, April 17, 1918.*)

Disability Determined After Primary Examination.

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II..Hereafter any soldier who shall have been accepted on his first physical examination after arrival at a military station as fit for service, shall be considered to have contracted any subsequent determined physical disability in the line of duty unless such disability can be shown to be the result of his own carelessness, misconduct, or vicious habits, or unless the history of the case shows unmistakably that the disability existed prior to entrance into the service. The same rulings shall apply in the cases of officers who have been passed as fit for service on physical examination upon entrance into the service. * * *

(*G. O., No. 47, W. D., May 11, 1918.*)

Special Physical Examining Boards.

1. Boards of examiners, consisting of specially selected officers of the Medical Reserve Corps, will be sent to all the larger camps of the Army, so far as practicable, for the purpose of examining the commands for tuberculosis. The size of the board sent to a given camp will be governed by the size of the camp, but not less than three officers will ordinarily be sent to any camp. A detachment consisting of noncommissioned officers and privates or privates first class, Medical Department, will be ordered to the camps in which examinations are to be conducted for the purpose of assisting in the clerical and other work of the examinations. Suitable quarters will be provided by the camp authorities for these medical officers and for the enlisted men of this detachment, and also places in which the examinations can be conducted. The men composing an organization (company) will, so far as is practicable, be examined consecutively. A nominal list of each organization will be furnished the examiners at the time of the examination of the organization. Men found by the examiners to be affected with tuberculosis will be reported to the commanding officer through the camp surgeon. The examiners will be instructed by the commanding officer as to the manner in which such reports will be made. When action under the provisions of paragraph 161, Army Regulations, is necessary, a disability board will be appointed from the examiners, or, in case of large commands, as many boards, consisting of three members each, may be constituted as appear to be necessary for the most rapid execution of the work. In order to save time and to avoid the unnecessary repetition of physical examinations, the recommendations of the examiners as to discharge on account of tuberculosis will not be subject to revision by the camp surgeon.

2. Expert examiners in other specialties, such as psychiatry, orthopedics, cardiovascular diseases, etc., will likewise be assigned to the larger camps for duty. It is not contemplated that such specialists shall necessarily examine all members of the command. They will act either as members of the medical staff of the organization, with more or less permanent assignment to it, or in certain cases they may visit a command for relatively brief periods to act as consultants with the camp surgeon or to give instructions in their specialties to the medical officers of the command. Medical officers who are attached to the medical staff of a command as regular members of it do not differ as to their status from other medical officers. In case, however, the medical officer or officers shall have been sent on temporary duty for the purpose of conducting a methodical examination of the command for tuberculosis, or for instructing the medical officers, or for rendering expert advice in a specialty, the character of the service which the officer or officers in question are expected to render will be indicated in orders from the War Department. Officers visiting military stations on duty of this kind and such enlisted men of the Medical Department as may be ordered to assist them will be subject to no other detail while acting under such assignment. The specialists will be governed in their professional work by instructions from the Surgeon General of the United States Army. They will render all reports through the camp surgeon for transmission through official channels. The commanding officer will facilitate the work of the special examiners by indicating the men whose examination is desired, arranging for the instruction of medical officers, etc., and the examiners will conduct their examinations in such a way as to interfere as little as possible with the regular work of the command. Officers who plan and conduct the physical

training of military organizations will confer with the expert in cardiovascular diseases (diseases of the heart and blood vessels), if one is present, with reference to the manner in which courses of physical training may be most advantageously carried out.

(*Cir., W. D., July 16, 1917.*)

Men Inducted for Limited Service.

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II..Men inducted for limited service are generally not in the best physical condition, and are intended to be used in special positions for which they have been fitted by their previous civilian life. They are usually not in such physical condition as to be able to take up the strenuous military drill and exercise required for soldiers generally. Upon the arrival of such men at posts, recruit depots, trade schools, etc., the commanding officers will so graduate their military instruction as to make it compatible with the physical condition of the men. The surgeon should be required to examine each of these men and make recommendations as to the amount of drill or physical exercise he can profitably stand. Men inducted for special or limited service will not be returned to their local boards unless clearly physically unable to perform the special work for which they are inducted. * * *

(*G. O., No. 71, W. D., August 3, 1918.*)

Physical Examination on Receipt of Orders for Overseas.

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II..1. When a command receives orders for oversea service, all officers and enlisted men will be given a careful physical examination by medical officers in order to determine whether or not they are fitted for full military duty in the field. Officers and enlisted men found to be physically unfit for such service will be promptly transferred from the organization and will not accompany their organization to the port of embarkation. As far as practicable, this examination should be made by medical officers not attached to the organization undergoing examination. Camp commanders are responsible for the thoroughness of physical examinations of all troops leaving their camps. With a view to reducing the number of individuals which must be eliminated on receipt of orders for oversea service, it is of the utmost importance that men with defects which disable for duty overseas should be transferred to development battalions, or otherwise disposed of, as soon as the defects are detected.

2. Similar action should be taken to eliminate the physically unfit when enlisted men are transferred from one camp or station to another camp or station for duty.

3. In both the above instances specific exceptions may be made in the case of men who are being sent to a point where they are destined for special or limited military service only.

4. Nothing in the above instructions shall be interpreted to modify the existing instructions regarding the examinations for and the elimination of cases of infectious disease, "contacts," and men infested with vermin in organizations moving from one camp or station to another camp or station or to a port of embarkation.

5. In case men arrive at or are sent to join organizations at port of embarkation who, for any reason, have not been given the physical examination referred to above to eliminate those physically unfit for field service overseas, the commanding officer of organization containing such unexamined men will report the fact to the commanding general of the port of embarkation, who will have rigid physical examination made for such men to determine their fitness for field service overseas. * * *

(*G. O., No. 72, W. D., August 6, 1918.*)

Examination of Officers Physically Fit for Limited Military Service.

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VI..1. (*a*) The purpose of this order is to provide for the examination of all officers who are physically fit for limited military service only, and their assignment to such duties as they are physically capable of performing. The objective to be reached is the highest possible utilization of the services of all officers whose physical fitness is impaired, but who, if properly placed, are still capable of performing certain duties with such a degree of efficiency as to make their retention in the service desirable.

(*b*) Boards of officers convened under this order will consist of five members, two of whom will be of the Medical Corps. The senior member will act as president; and for each board a recorder will be appointed, whose duty it shall be to record the proceedings of the board and when required by the board to collect and present evidence. When the membership of any board is reduced by challenge or otherwise to less than five, the convening authority will be promptly notified thereof and will detail thereon the number of officers required to bring the membership up to five. This order will be cited in the order convening any such board as the authority therefor. No oath will be administered, but members of the board and the recorder will perform their duties under their oaths as officers. Boards hereunder may be convened by any officer exercising general court-martial jurisdiction for the examination of any officer who is a member of his command.

(*c*) It is hereby made the duty of every officer commanding a regiment, a separate battalion, a hospital, a post, or other like unit or place, but who does not exercise general court-martial jurisdiction, to report to the officer who does exercise such jurisdiction for his command, the name, rank, and station of any officer in his command whom he believes to be physically fit for limited military service only, together with a statement as to the nature of his disability. Upon receiving such a report the officer exercising general court-martial jurisdiction for the command will, if the facts as reported warrant such action, direct the officer so reported upon to appear before a board convened under this order for examination.

(*d*) Examinations hereunder shall include an investigation into the officer's general physical condition and fitness for service, his education and training, his previous experience, and his general suitability for commissioned service. In reaching a conclusion as to physical fitness a departure from existing standards is permissible. The question of physical fitness is to be determined as a question of fact with reference to the performance of a particular duty. The loss of an eye, an arm, or a leg does not in fact constitute physical incapacity for the performance of many duties upon which officers are now engaged.

(*e*) The record of a board convened hereunder should show a copy of the convening order; the place and date of meeting of the board; the fact that counsel was introduced, or not desired, by the officer under examination; that such officer was given the right to object to any member of the board and the action taken on his objections, if any; a full report of any evidence taken by the board and of any statements made by the officer under examination; original or duly authenticated copies of all papers considered by the board; and, finally, the conclusions reached by the board. These conclusions will show—

(1) Whether, in the opinion of the board, the officer is capable of performing any military duty.

(2) The nature and degree of his physical incapacity.

(3) The estimate of the board as to the officer's general suitability for military service.

(4) A statement of the particular kinds of service which, in the opinion of the board, the officer is fit to perform. These will be stated in order corresponding to the fitness and suitability of the officer for service as determined by the board.

The report of proceedings will be prepared in duplicate and signed by the president and recorder of the board.

2. The convening authority, upon receiving the report of any board convened hereunder, will approve or disapprove the same, retain one copy thereof and forward the original to The Adjutant General of the Army for file with the officer's record. If the officer reported upon is found fit for the performance of limited military service of a class required in the command of such convening authority, he will assign such officer to such service whenever this will release an officer who is physically fit for more exacting duties. If no opportunity is open in his command for the employment of such officer on limited military service, the convening authority will promptly report that fact to The Adjutant General of the Army, who will transmit all papers in the case to the Personnel Branch of the General Staff.

When the command of any convening authority forms a part of any American Expeditionary Force, the convening authority will forward the original report to the commanding general of such expeditionary force with a statement as to whether the officer, if found fit for limited service only, can, profitably to the Government, be retained on duty within such command. The commanding general of the expeditionary force will indorse on the report his approval or disapproval and forward the same to The Adjutant General of the Army. In a case where the officer has been found fit for limited service only, the commanding general of the expeditionary force may assign him to duty within his command or return him to the United States as the interests of the military service may require. He will report his disposition of the case to The Adjutant General. Officers found fit for limited service only and not assigned to duty by the convening authority or the commanding general of the expeditionary force will be assigned to appropriate duty or otherwise disposed of by the War Department.

(*G. O., No. 94, W. D., October 19, 1918.*)

Conduct of Medical Examination—Final Separation of Officers and Enlisted Men From Service in the United States Army.

22. The following instructions for conducting the physical examination prescribed in paragraph 2 will govern:

(*a*) The physical examination will ordinarily be made in camps or stations in the United States to which troops have been ordered for demobilization, or at which they may already be. Such physical examination will be made and completed under the direction of the camp surgeon or other senior surgeon of the command with the least practicable delay. Except in doubtful or deferred cases, the examination of any individual officer or soldier should be completed on one day by the examining surgeon or a special examining board designated by the camp surgeon or other senior surgeon of the command.

(*b*) Except in case of small commands, the camp surgeon or other senior surgeon of the command will appoint a medical officer experienced in the duties of examining boards and in conducting physical examinations, who shall be the chief medical examiner of that command.

(*c*) The chief medical examiner will coordinate the duties of and have general supervision over the examining board. He will organize the personnel assigned to it into one or more examining teams, assigning the individual members thereof to such duties as the public interest may dictate. He will appoint a principal medical examiner for each examining team.

(*d*) Each principal medical examiner will supervise the operation of his examining team and will be responsible to the chief medical examiner for the conduction of the physical examinations made by the team and the proper preparation of the necessary records. He will sign the certificate of examining surgeon on form for report of examination.

(*e*) The examining board should consist of sufficient medical officers, including all necessary specialists. Experience has demonstrated that a well-balanced team may be composed somewhat as follows:

	Examiners.
(1) General examination, including skin, general surgery, hernia, hemorrhoids, varicocele, varicose veins, etc	3
(2) Dental	1
(3) Orthopedic, including bones and joints	3
(4) Eyes	1
(5) Ears, nose, and throat	1
(6) Cardiovascular	3
(7) Tuberculosis	6
(8) Neuropsychiatric	3

(*f*) In the physical examination of special or limited-service men, medical examiners will interrogate the soldier as to the disability or defect which he had upon entrance into the service which placed him in the limited-service class. The physical examination of such men will be made with great care, with special reference to the defects which the man states that he had upon entrance into the service.

(*g*) A report of each physical examination will be rendered upon Form No. 395–1, A. G. O., if for an officer, and upon Form No. 135–3, A. G. O., if for an enlisted man (see pars. 5 and 9). Should the certificate of the officer or the declaration of the enlisted man be at variance with the finding of the medical examiner, the officer or enlisted man will be immediately referred to a board of review convened by the camp, post, or regimental commander. A formal order convening the board is not necessary and in large camps or posts the power to convene the board will usually be delegated to the camp or post surgeon.

(*h*) The board of review will consist of not less than two medical officers, designated by the camp surgeon or other senior surgeon of the command. The board will be under the supervision of the senior medical examiner. After a thorough physical examination of the officer or soldier referred to it, together with a careful investigation of all the circumstances in the case, it will complete Form No. 395–1, A. G. O., or Form No. 135–3, A. G. O., as the case may be.

(*Cir. No. 73, W. D., Washington, November 18, 1918.*)

Execution of Final Physical Examination Form.

With reference to the physical examination of officers and enlisted men, as prescribed in subparagraph (*a*), paragraph 22, Circular No. 73, War Department, 1918, all enlisted men transferred from one camp, post, or station to another for the purpose of discharge will be physically examined as to fitness for transfer at the camps, posts, or stations from which transfer is made. The final physical examination prior to separation from the service will be made at the camps, posts, or stations at which men are actually separated from the service.

(*Cir. No. 162, W. D., December 18, 1918.*)

Physical Examination of Men Prior to Being Sent to Demobilization Centers for Discharge.

17. All men designated for discharge, except men arriving from overseas, will be given a thorough preliminary physical examination prior to the time they leave their present station for demobilization centers, and men found not physically eligible for discharge at such examination will not be sent to a demobilization center for discharge. When such men become eligible therefor, they will be immediately sent to the proper demobilization center for discharge. The final physical examination prior to separation from the service will be made at the station where the man is actually separated from the service. Men arriving from overseas at ports of embarkation in this country need not be given this preliminary examination prior to their departure for demobilization centers.

Men transferred to a demobilization center for immediate discharge who are found physically ineligible therefor will be transferred to a convalescent center or to the proper hospital for treatment. Intensive treatment will be given venereal cases. When they become eligible therefor, all such men will be immediately discharged under the authority of this circular, without further orders. A report giving number, reasons prohibiting discharge, and station from which all men ineligible for discharge came, will be promptly made to The Adjutant General of the Army, attention room 336, except in the case of men returned from overseas who are forwarded from ports of embarkation. * * *

(*Cir. No 252, W. D., May 14, 1919.*)

Physical Examination of Enlisted men Prior to Furlough to Reserve—Amendment to Circular No. 261, War Department, 1919.

The last paragraph of Circular No. 261, War Department, 1919, is amended to read as follows:

Men may be furloughed to the Reserve at their "present stations," however, in cases where their transfer to demobilization centers for furlough would cause undue distress or hardship, provided there are medical officers present capable of conducting the physical examination required by subparagraph (*a*), paragraph 1, Circular No. 72, War Department, 1919.

In all cases where there is no medical officer capable of conducting the physical examination required by Circular No. 72, War Department, 1919, present at the station of an enlisted man eligible for furlough to the Reserve under the provisions of Circulars Nos. 16 and 35, War Department, 1919, as supplemented by Circulars Nos. 55, 72, and 247, War Department, 1919, and where the transfer of the man to a demobilization center for furlough as provided for above would cause undue hardship or distress, he will be sent without delay for furlough to the Reserve, to the nearest station in the same territorial department at which a medical officer capable of conducting the physical examination is stationed.

(*Cir. No. 402, W. D., August 16, 1919.*)

Physical Examination of Applicants for Enlistment.

In connection with Circular No. 118, War Department, 1919, the following instructions relative to the physical examination of applicants for enlistment are published for the information and guidance of all concerned:

The physical examination of all applicants for enlistment in the Regular Army will be made, as far as practicable, by well-balanced groups of medical officers, consisting of a number of specialists, when available, instead of having the entire examination made by one medical officer.

It is recognized that it will be impracticable in many posts and camps, owing to the present shortage of medical officers, to provide an examining group in which all special branches of medicine are represented, and that at certain isolated posts and stations the entire physical examination must be made by one medical officer. It is desired, however, that the "group" scheme of examination be followed so far as local conditions permit. If fully qualified specialists are not available medical officers present best qualified in the requisite specialties should be assigned to this duty. It is thought that at the larger camps and posts it will be possible to organize an examining group somewhat as follows:

1 general examiner, including surgery, orthopedic, skin, hernia, venereal diseases, etc.
1 internist (tuberculosis, cardiovascular, etc.).
1 eye, ear, nose, and throat examiner.
1 dental examiner.

Also, when available, a neuropsychiatric examiner should be included in the group. When not available, his part of the examination should be conducted by one of the other examiners.

Medical officers selected as members of an examining group, as above outlined, should act as examiners in addition to other routine duties to which they may be assigned. In all posts and camps, excepting demobilization centers, physical examinations should ordinarily be made at the hospital, where the necessary facilities exist for conducting the most thorough examinations and where specialists may be available for this work without interfering with their other duties.

(*Cir. No. 435, W. D., September 23, 1919.*)

Annual Physical Examination of Officers.

1. Attention is directed to the provisions of paragraph 23, Compilation of General Orders, Circulars, and Bulletins, War Department, 1881–1915, as changed by Changes No. 18, August 15, 1919. The instructions contained therein apply to all officers in active service whether holding commissions that are permanent or for the period of the emergency only. Each Form No. 378, A. G. O. (Report of Physical Examination), will be marked "Regular" or "Emergency," as the case may be.

2. The prescribed annual physical examination will be given all officers on sick report or in hospital so far as their physical condition permits. For each officer in hospital not previously reported under the provisions of Circular No. 497, War Department, 1919, examination will be conducted by a board convened by the commanding officer of the hospital, and the report of this board will include the following:

(*a*) Length of time under treatment.
(*b*) Form No. 378, A. G. O.
(*c*) Probable date of completion of treatment.
(*d*) Recommendation as to whether or not officer should be continued in active service.
(*e*) Any other information for the guidance of the War Department in determining the action to be taken.

(*Cir. No. 561, W. D., December 20, 1919.*)

PSYCHOLOGY.

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Psychological Division.

VII. The Psychological Division shall be primarily established in the Office of the Surgeon General; the school for military psychology, Fort Oglethorpe, Ga., at those points where depot brigades are or will be established, and at Camp Humphreys, Va. In addition, the Surgeon General shall maintain at the School of Training for Psychological Personnel, Fort Oglethorpe, Ga., a reserve, trained and in training, composed of officers and enlisted men. Such reserve will be called upon to furnish, under direction from the Chief of Staff, psychological personnel, either permanently or temporarily, for such other points and at such times as necessity for the same may arise.

Chiefs of staff corps, department commanders, and commanding officers of posts or stations may make official request for permanent or temporary psychological personnel for detail at schools camps, or stations, as necessity arises.

Psychological examinations of line officers will be made only on the recommendations of commanding officers and of officers of staff corps upon request of the respective chiefs of staff corps.

Psychological examinations for all candidates for officers' training camps will be held where sufficient psychological personnel is present and where time may permit the results of such examinations to be placed in the hands of organization commanders before final recommendations on candidates are made. These results will be used only as assisting guides in making selections.

No particular psychological rating shall be declared as the minimum to be attained by any such candidates. Directors of training camps may request that psychological examinations of students be held where ratings may be deemed of value.

Such recruits arriving at depot brigades or other points where the Psychological Division is established as may, in the opinion of the commanding officer, require such examination, will be examined psychologically and during their two weeks' examination will be held for groups when necessary, and individually by direction of commanding officers as they shall nominate. Organization commanders and camp or post surgeons where psychological examiners may be present will recommend, when necessary, that special examinations of particular cases be held.

Under direction of cantonment commanders, any special branch or office of the cantonment organization may request the assistance of a psychological examiner where it is deemed his services would be of value. Commanding officers of development battalions will requisition for these examiners whenever necessary.

Commanding officers other than cantonment commanders may make requisition for psychological examiners from time to time as necessity arises.

Camp or post surgeons under whose jurisdiction the psychological personnel shall fall will be responsible to their respective commanding officers that the examinations are properly held; that psychological examiners reduce the time in individual examinations to the lowest practicable minimum, in the majority of cases by questioning and by personal observation solely, particularly where recommendation for transfer to a development battalion is the obvious solution, and that they resort to detailed standard psychological tests only in the more doubtful cases; that the reports of examinations be promptly made; that judicious coordination be established between the psychological and psychiatric divisions to the end that the facilities of both may be used to obtain the most prompt action on low mentality cases.

Psychological reports, where ratings only are given, will be forwarded to the personnel adjutants for their use in connection with other qualification-card information in allotting recruits to organizations, and further, by such adjutants, to proper organization commanders for the information of the latter. If this be without the depot brigade, the ratings should accompany the men concerned wherever practicable. The information thus conveyed will be considered as an assisting and accelerating guide to commanders in assigning their men for particular duties and in training. Attention is here invited to the fact that it may be possible for regimental commanders to perfect and produce well-balanced organizations by judicious use of psychological ratings at time of incoming large drafts and in connection with the assignment of men to companies; and possibly by company commanders, by special grouping with the idea of speeding up training.

Where, in addition to ratings, psychological reports recommend discharge, individual examination, or assignment to development battalions, camp or post surgeons, under direction of commanding officers, will provide for special examination of the individuals so reported before disability boards. Such disability boards shall be composed of medical officers, not all of whom shall be of any one class of specialists, as, for example, psychiatrists, and in addition, wherever practicable, of one experienced line officer.

Psychological reports shall be placed in the hands of organization commanders at the earliest practicable date in order that their ratings may be made of value.

In special cases, where time does not permit that complete individual examinations be made, psychological examiners will make, for the information of the surgeon and personnel adjutant, some such provisional qualifications card report as "illiterate," or otherwise, as the case may be.

Under direction of commanding officers, the psychological personnel present will be supplemented when necessary by enlisted members of the Medical or Sanitary Corps, who shall remain on psychological duty only in the rush of examination of large groups and while making up rush reports on the same.

Commanding officers shall provide quarters for the psychological division while bearing in mind that their principal need is for one or two large rooms to hold groups of approximately 100 men during examinations. If need be, the commanding officers of base or other hospitals will be called upon for temporary space, or directors of the Y. M. C. A.'s temporarily, where no other space is available. Minor office space and individual examination rooms will be furnished in available situations. Centralization of the Psychological Division in post or cantonment is desirable but not obligatory. If necessary, tentage will be used.

When deemed for the benefit of the service at large, the Surgeon General may request that commanding officers of stations where psychological examinations have been held be called upon for recommendation toward the improvement of the Psychological Division and its service.

The Surgeon General may transmit direct to camp or post surgeons such technical instructions covering the Psychological Division as he may desire. All such communications will be laid before the commanding officers concerned for their information.

None of the above instructions shall apply to the Division of Military Aeronautics.

(*G. O., No. 74, W. D., August 14, 1918.*)

PHYSICAL RECONSTRUCTION.

Enlistment of Disabled Former Soldiers for Physical Reconstruction.

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III. .Enlistments of disabled former soldiers for purposes of rehabilitation under the provisions of section 304 of the act of Congress approved October 6, 1917, published in Bulletin No. 57, War Department, 1917, will be for the Regular Army, and the regular enlistment paper, Form No. 22, A. G. O., will be used, the notation "Disabled soldier" being made at the top of first page of the form, and the declaration and oath changed by erasing the words "for the period of three years in the active service and four years in the Regular Army Reserve," substituting therefor the words "under the provisions of the act of October 6, 1917." In the oath of enlistment the words "unless sooner" will be erased, substituting therefor the word "until."

(*G. O., No. 1, W. D., January 2, 1918.*)

Definition.

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2. (*a*) Physical reconstruction is defined as complete medical and surgical treatment, carried to the point where maximum functional restoration, mental and physical, has been secured. In securing this result the use of work, mental and manual, will often be required during the convalescent period.

(*b*) Hereafter no member of the military service disabled in line of duty, even though not expected to return to duty, will be discharged from service until he has attained complete recovery or as complete recovery as it is to be expected that he will attain when the nature of the disability is considered. When the degree of recovery described in this paragraph has been attained, members of the military service who remain unfit for further duty should be discharged in the manner provided in Army Regulations.

(*Bull. No. 36, W. D., July 11, 1918.*)

PHYSICAL TRAINING.

Of Older Men to be Called into Service under the New Draft Law.

1. Under the new draft act men of greater age than formerly was the case will appear for training. Among them will be many whose mode of life has deprived them of the active physical exercise necessary for the maintenance of the best physical condition and well being. It becomes necessary to modify in many cases the strenuous character of the physical work that has been required in the past in order that these men may round into condition without permanent injury.

2. Commanders responsible for the training of this class of men will take positive measures to see that the physical capacity of the older men shall not be overtaxed and will exercise special care and supervision in this matter in the early stages of training.

(*Cir. No. 15, W. D., October 16, 1918.*)

QUARANTINE.

At Ports of Embarkation.

1. It has been called to the attention of this office that frequently when a detachment of men are about to leave camp for overseas service that at the last moment a case of measles is discovered and the entire detachment is put into quarantine.

2. This question has been a troublesome one since the shipment of troops began, and the present regulations are the result of several exchanges of cablegrams with General Pershing and of recommendations of the Surgeon General.

3. There are two desirable objects intended to be accomplished by the regulations—first, to prevent ports of embarkation being obstructed with hospital and quarantine cases of communicable diseases; second, to prevent similar cases reaching France and burdening the hospitals there.

4. On the other hand, a too strict interpretation of the instructions interferes materially with the shipment of troops overseas.

5. It is the opinion of this office that a distinction should be drawn between men suspected of having a communicable disease, men known to be contacts, and men suspected of being contacts. The first and second classes should not be transferred. The division or camp commander, after consulting his surgeon, should exercise his discretion in the third class.

(*Cir. Letter from The Adjutant General of the Army, April 30, 1918.*)

AMERICAN NATIONAL RED CROSS.

Acceptance of Assistance by President.

1. The President, having been directed to employ all the resources of the Government in the prosecution of the war, the existence of which was recognized by the joint resolution of the Senate and House of Representatives April 6, 1917, has accepted the cooperation and assistance of the American National Red Cross with the land and naval forces of the United States, under the provisions of the act of Congress approved April 24, 1912, and also the extension by the American National Red Cross of its humanitarian services to the armies and to the civilian population of countries now at war with the Imperial German Government.

2. To facilitate the discharge of their authorized functions, duly qualified members other than units, sections, and individuals accepted for service by the War Department and incorporated in the commissioned or enlisted strength of the Medical Department of the Army (pars. 6–8, Regulations Governing the Employment of the American Red Cross, December 18, 1916), are recognized by titles with assimilated rank and for appropriate duties, as shown in the following table:

OFFICIALS.

Grade	Title.	Assimilated rank.	Duties.
1	Chairman central committee	Major general	Indicated by title.
	Chairman war council	do	Do.
2	Members of war council	Brigadier general	Do.
	Vice chairman central committee.	do	Do.
3	Director general	Colonel	1. In charge civilian relief. 2. In charge military relief.
4	Assistant director general	Lieutenant colonel	1. Indicated by title. 2. Directors of certain bureaus. 3. Other duties of like importance.
	Commissioner	do	1. Commissioners to any theater of war (as France, Italy, Russia, etc.).
5	Director	Major	1. Directors of certain bureaus. 2. Representing American National Red Cross at Army or corps headquarters, at headquarters of line of communications or base abroad, or at a divisional camp or cantonment in the United States. 3. Base hospitals. 4. Supply depots. 5. Other duties of like importance.
6	Assistant director	Captain	1. Representing the American National Red Cross with any detachment of the Army less than above. 2. Storekeeper. 3. Assistant to any official of higher grade. 4. Adjutant or quartermaster of a base hospital. 5. Other duties of like importance.
7	do	First lieutenant	

EMPLOYEES.

8	Secretary	Sergeant major	Clerical.

RED CROSS BASE HOSPITALS.

9	Red Cross master hospital sergeant.	Master hospital sergeant, Medical Department.	Base hospitals.
10	Red Cross hospital sergeant...	Hospital sergeant, Medical Department.	Do.
11	Red Cross sergeant, first class..	Sergeant first class, Medical Department.	Do.
12	Red Cross sergeant............	.....do......................	Do.
13	Red Cross corporal............	Corporal, Medical Department.	Do.
14	Red Cross cook................	Cook, Medical Department.....	Do.
15	Red Cross private first class...	Private first class, Medical Department.	Do.
16	Red Cross private.............	Private, Medical Department..	Do.
17	Red Cross laborer.............	.....do......................	Any duty imposed.

3. Officials (grades 1–7, inclusive) will be nominated by the chairman of the war council, and, if properly qualified, will be given commissions signed by the Secretary of War and countersigned by the chairman of the war council. These commissions confer no military authority, obligation, or other incident attached to rank or office, nor any right to pay or allowances of similarly described grades in the United States Army. They serve as certificates of idenity authorized by paragraph 5 of the proclamation by the President published in Gerneral Orders, No. 170, War Department, 1911. They indicate to members of the land and naval forces that officials of the assimilated rank indicated in their respective commissions are persons in whom the Commander in Chief and the American National Red Cross have confidence and from whom the above authorities enjoin cooperation in the discharge of their functions and that courtesy and respect due to persons designated for such important duties to humanity.

4. Warranted employees (grades 8–13, inclusive) will be appointed by the proper superiors of the American National Red Cross, being given warrants signed by officials designated by the American National Red Cross.

Employees (grades 14–17, inclusive) will be given certificates of identity signed by officials designated by the American National Red Cross.

The same restrictions upon military authority, obligations, pay, allowances, etc., described in paragraph 3 as applicable to commissions, apply to warrants and certificates of identity.

5. To avoid the presence in European theaters of war of persons who may not be acceptable to the authorities of any foreign government or in whose loyalty there may not be placed undoubted confidence by the Government of the United States as well as of such Governments, the name, residence, and former employment of each member of the American National Red Cross below grade 7 who is sent abroad will be furnished to The Adjutant General of the Army for transmission to the chief War College Division of the General Staff Corps. If employed abroad, similar information will be furnished the commanding general, United States forces in France.

6. Pursuant to authority conferred by section 125 of the act of Congress approved June 3, 1916, the American National Red Cross is designated by the Secretary of War as an organization the members of which are permitted to wear their prescribed uniforms; in this case, the uniform of the United United States Army, or such other uniform as may be recommended by the American National Red Cross and approved by the Secrerary of War.

7. As insignia of title and assimilated rank the following distinctive marks are prescribed, to be worn as indicated:

(*a*) On cap, hat, or helmet.

Grades 1–7, inclusive: Greek cross in red enamel above the coat of arms of the United States in bronze metal.

Grades 8–17, inclusive: Greek cross in red enamel.

(*b*) On both sides of collar of coat or shirt.

Grades 1–17, inclusive: The letters U. S. in bronze metal and Greek cross in red enamel, placed as are the U. S. and corps insignia of officers of the Army.

(*c*) On both sleeves of coat or shirt, midway between the elbow and the end of sleeve.

Grade 1: Horizontal band of blue cloth, ¾ inch in width about the arm. Two stars of silver metal, 1 inch apart and 1 inch above the band, and a Greek cross of red cloth 1 inch above the interval.

Grade 2: Same as 1, with one star 1 inch above center of band, in lieu of two stars.

Grade 3: Five bands of blue cloth, each ⅜ inch in width and 2½ inches in length, midway between elbow and end of 1 inch above the band, and a Greek cross of red cloth 1 inch above center of upper band.

Grade 4: Same as 3, with four blue bands.

Grade 5: Same as 3, with three blue bands.

Grade 6: Same as 3, with two blue bands.

Grade 7: Same as 3, with one blue band.

When dress uniform is worn, bands will be of gold braid instead of blue cloth.

Grades 8–14: Of same forms and in same positions as prescribed for chevrons of similar grades of the enlisted strength of the Army, but of dark blue cloth with Greek cross in red cloth 1 inch above each chevron.

Grades 15–17: Greek cross of red cloth on sleeve midway between shoulder and elbow.

8. Uniform and insignia will be supplied by the American National Red Cross.

9. The use of military titles, rank, and uniform is authorized only for the American National Red Cross representatives actually in foreign countries constituting the theater of active war.

(*G. O., No. 82, W. D., July 5, 1917.*)

Outline of Approved Activities of.

V..It is the desire of the Secretary of War, as it should be of all officers of the Army, to do everything possible for the comfort and welfare of the soldiers and to make use of such agencies as are authorized and are in a position to contribute to that end, in addition to the provisions made by the Government. The American Red Cross is a body authorized by law to render services of this character. The following general statement outlining certain approved activities of the Red Cross and methods for carrying them on is published for the information and guidance of all concerned:

1. To distribute sweaters, mufflers, helmets, socks, comfort kits, etc., and to receive the assistance and cooperation of all officers in making the distribution fair, equal, and where most needed.

2. To render emergency relief of every kind upon the request or suggestion of an officer in charge. All officers are instructed to avail themselves of this assistance whenever, in their opinion, advisable. Officers should be none the less diligent in attempting to foresee the needs of their department in order that they may be supplied through regular Government channels. All such requests must be approved by the commanding officer, who will cause a record to be kept of all such articles.

3. To relieve the anxiety and to sustain the morale of soldiers who are worried about their families at home and to promote the comfort and well-being of these families, authority is given to the American Red Cross to place one or more representatives of the Home-Service Bureau of the Department of Civilian Relief at the service of the men of each division of the Army wherever located. The soldiers should be informed through official orders of the presence of such representative or representatives and that the Red Cross is able and willing to serve both soldiers and their families when in need of any helpful service. This representative and his assistants will be accredited to the division commander and will be subject to his authority and to military laws and regulations. This representative of the Red Cross will have the status of an officer in the Army and will be provided quarters when available. Such assistants and clerks as may be necessary will be provided by the American Red Cross and must be males. These assistants and clerks, if any, will have the status of noncommissioned officers. All reports and correspondence of this officer will be subject to censorship of the commanding officer.

4. To conduct canteen service stations for furnishing refreshments to soldiers when traveling through the country, to furnish emergency relief to the sick and wounded when enroute, and to see that they are conveyed to a hospital when necessary and requested by the commanding officer. All commanders of troop trains are advised of this emergency service and are authorized to avail themselves of it whenever, in their opinion, advisable.

5. A representative of the American Red Cross may be attached to each base hospital to furnish emergency supplies when called upon, to communicate with the families of patients, to render home service to patients, and such other assistance as pertains to Red Cross work. The representative of the Red Cross so assigned, together with his assistants, will be accredited to the commanding officer of the base hospital and will be subject to the same regulations as to status

privileges, assistants, and censorship as provided in preceding paragraph applying to the representative of the Red Cross assigned to divisions.

6. In order to render the above-outlined service to the best advantage, the accredited chief officer representing the American Red Cross at division headquarters will be a field director.

7. Officials of the Red Cross assigned on duty with the Military Establishment as outlined above will be required to wear the regulation uniform of the American Red Cross, together with the insignia, etc., as approved by the Secretary of War.

8. The commanding generals of all cantonments and National Guard encampments and the commanding officers of all other encampments or organizations with this order are authorized to furnish to the American Red Cross anything that they may request within reason, such as warehouses, offices, light, heat, telephones, etc., in order to enable them to properly carry on the work for which they are assigned.

(*G. O., No. 17, W. D., February 13, 1918.*)

Uniform and Insignia.

III..Paragraph 7, Section V, General Orders, No. 17, War Department, 1918, is amended to read as follows:

7. Officials of the Red Cross assigned to duty as outlined above with the Military Establishment in foreign countries which constitute the seat of active warfare will be required to wear the regulation uniform of the American Red Cross, together with the insignia, etc., as approved by the Secretary of War. Such uniform and insignia is not authorized for wear except as herein prescribed. * * *

(*G. O., No. 48, W. D., May 17, 1918.*)

Red Cross a Part of Sanitary Service.

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III..The American National Red Cross serving with the land forces is a part of the sanitary service of such forces, and under the orders of the President is the only volunteer society authorized by the Government to render aid to said service. Any other society desiring to render similar aid can do so only through the Red Cross. This principle governs all organized activities within hospitals which are not conducted by direct governmental action, and all similar activities on the reservations occupied by hospitals as well. When organized voluntary assistance is acceptable under the regulations made therefor, the same will be procured from or through the Red Cross, and not otherwise. Nothing herein contained shall, however, be construed to prevent the Red Cross, as the primary and sole recognized agency of organized volunteer aid, from obtaining and receiving suitable services from other voluntary organizations which are particularly equipped to render the same, subject to the paramount and intervening authority of the proper commanding officers. * * *

(*Bull. No. 50, W. D., August 31, 1918.*)

REGISTRANTS.

Assignment of Registrants to Particular Corps or Departments.

1. When a registrant desires to be voluntarily inducted into the service for assignment to any particular corps or department, and such assignment is desired by the chief of the corps or department, the applicant may be furnished with a request in triplicate to be presented to his local board by authority of the chief of the corps or department for such assignment, giving the place and to whom the man should be sent for duty.

2. When a registrant is voluntarily inducted into the service under the provisions of section 150 or 179, Selective-Service Regulations, and ordered to report to a place other than a mobilization camp, the officer to whom he reports will complete the action required by the Selective-Service Regulations for the induction and make the prescribed disposition of the papers in the case. If there is no medical officer readily available to make the prescribed medical examination, or the necessary blank forms are not on hand, report will be made by telegraph to The Adjutant General of the Army.

(*G. O., No. 161, W. D., December 22, 1917.*)

VI..Paragraph 1, General Orders, No. 161, War Department, 1917, is rescinded and the following is substituted therefor:

When a chief of any staff corps or department of the Army, the Chief of Coast Artillery, the Chief of Field Artillery, or the director of the Tank Corps desires a registrant inducted into the service for assignment to his particular corps or department, and the Secretary of War has granted authority for such induction, he will make requisitions in duplicate, Form 2006, P. M. G. O., on the provost marshal general, who will forward it to the local board concerned, and later notify the staff, corps, or department whether the registrant accepts or declines the service. This order will not be construed as modifying the restrictions of Section III, General Orders, No. 53, War Department, 1918, relative to induction of men for duty in Washington. * * *

(G. O., No. 58, W. D., June 22, 1918.)

SANITARY CORPS.

Creation of.

III..The President directs that under the authority of the first proviso of section 2 of the act "to authorize the President to increase temporarily the Military Establishment of the United States," approved May 18, 1917, there be organized under the Medical Department for the period of the existing emergency a Sanitary Corps consisting of commissioned officers proportionally distributed among the several grades as in the Medical Corps now established by law, and such enlisted men as the Secretary of War may determine to be necessary.

The total number of officers in said corps may be approximately equal to, but not exceed, 1 for every 1,000 of the total strength of the military forces authorized from time to time pursuant to law.

The officers of said corps will be provided by assigning officers of the Medical Reserve Corps thereto or by the appointment of officers of the Medical Reserve Corps, or of citizens of the United States who are found under regulations established by the Secretary of War to possess special skill in sanitation, in sanitary engineering, in bacteriology or other sciences related to sanitation and preventive medicine, or who possess other knowledge of special advantage to the Medical Department.

There shall be no grade in the Sanitary Corps above that of major and no officers of the Medical Corps shall be appointed in the Sanitary Corps. The number in the several authorized grades of the Sanitary Corps shall be proportional to the number authorized by law for the corresponding grades of the Medical Corps.

(G. O., No. 80, W. D., June 30, 1917.)

Personnel of.

III..Section III, General Orders, No. 80, War Department, 1917, is amended by the addition of the following:

Candidates for commission in the Sanitary Corps shall be examined with special reference to their qualifications for the duty upon which they will be employed.

The maximum enlisted strength shall consist of the following:

Hospital sergeants	40
Sergeants first class	275
Sergeants	430
Corporals	200
Privates first class	1,000
Privates	2,000

Their rank, pay, and allowances shall be the same as now authorized for corresponding grades in the Medical Department.

Men of special qualifications may be enlisted from time to time as their services are needed as noncommissioned officers.

Officers of the Sanitary Corps, Medical Reserve Corps, or Medical Corps especially designated by the Surgeon General may make enlistments for the Sanitary Corps, ascertain the grade for which the applicant may be qualified, and recommend his appointment in that grade. Examination for appointment in the various grades will be conducted under instructions from the Surgeon General with special reference to the applicant's qualifications for the duty to which he will be assigned. * * *

(G. O., No. 102, W. D., August 4, 1917.)

SANITATION.

Washing of Dishes and Mess Equipment.

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II. *Washing of dishes and mess equipment.*—1. (*a*) Reports of sanitary inspectors indicate that in many camps the washing of dishes and mess equipment is performed in such a manner as to favor the passage of disease germs from man to man.

(*b*) When dishes and mess equipment are washed, they must be thoroughly rinsed in boiling water. It is essential that the water be actually boiling. It can be maintained in that condition only by providing heat under the receptacle during the whole time that the rinsing process is going on. In cases where dishes other than mess equipment are used, or where the mess equipment of a company is pooled for general use, it is essential that the whole supply of dishes be actually boiled in a garbage can after each meal.

(*c*) This matter is of extreme importance at times when respiratory diseases of a serious nature are prevalent. * * *

(*Bull. No. 66, W. D., December 31, 1918.*)

Extermination of Flies.

1. Early and energetic measures must be taken to reduce to a minimum the number of flies in all camps, posts, and stations during the approaching fly season. These measures must be directed toward the prevention of breeding and the extermination of adult flies. Early attention must be given to both lines of work, as the prevention of the fly nuisance is largely dependent upon action at the beginning of the fly season.

2. In order to destroy flies before they have time to perpetuate their species after their winter hibernation, an active campaign against adult flies must be undertaken, as follows:

(*a*) Flytraps of suitable size should be placed at each stable, picket line, and corral; at each veterinary hospital, garbage transfer station, platform for loading manure; at each lavatory, pit latrine shelter, and garbage-can platform; at each kitchen, mess room, and bakery; and at any other place where flies congregate.

(*b*) Fly paper should be hung in each mess, bakery, kitchen, hospital ward, exchange, lavatory, pit latrine shelter, laboratory, and morgue, and should be renewed when circumstances demand.

(*c*) Fly swatters should be maintained in each mess room and kitchen, and used when the traps and fly paper are not sufficient to exterminate the flies.

3. Supply officers will furnish the initial allowance of fly paper and the materials for the manufacture of the traps and swatters without requisition. Outside traps will be made of wire screening material; inside traps of cotton material, if there is not sufficient wire screening. Improvised fly traps can be made of oil and gasoline cans.

4. Nothing in these instructions should be construed as diminishing the necessity for an energetic campaign against the breeding places. This should be carried out along the well-recognized lines, and is the main reliance in the prevention of the fly evil. The use of the traps, fly paper, and swatters is to supplement those efforts.

(*Cir. No. 133, W. D., March 18, 1919.*)

SHOE AND SOCK FITTING.

School for Training Officers in Shoe and Sock Fitting.

Commanding officers of posts, camps, and stations, including service schools and the United States Military Academy, will establish schools for officers in shoe and sock fitting. If available, officers who have completed the course at the Army schools for shoe and sock fitting held at Camp Meigs, Washington, D. C.; Jefferson Barracks, St. Louis, Mo.; and Camp Fremont, Calif., will be utilized as instructors. If none are available, the textbook "Army Foot Measuring and Shoe Fitting System," which will be supplied, will be used as a textbook in this course. This school will continue in operation until all company officers have had this instruction. The length of the course to be 12 hours, 7 to be theoretical and 5 practical. The necessary equipment will be furnished by the Quartermaster General of the Army upon requisition.

(*Cir. No. 118, W. D., December 5, 1918.*)

SUPPLIES.

Transfer of Veterinary Supplies to Medical Department.

1. All veterinary instruments, books, medicines, and supplies for the treatment of public animals and authorized private horses of mounted officers at posts, stations, or depots will be transferred, as soon as practicable, by the Quartermaster Corps to the Medical Department, and will be taken up and accounted for on the return of the latter department as medical property. At depots or other places where there is no officer of the Medical Department on duty, request will be made to The Adjutant General of the Army to designate an officer to receive and receipt for such property. * * *

(*G. O., No. 113, W. D., August 22, 1917.*)

Transfer of Supplies from One Bureau to Another.

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V. .During the present emergency, the Director of Purchase, Storage and Traffic is authorized to transfer supplies from one bureau or staff corps of the Army to another, or to another department of the Government, and, except in the case of subsistence stores, to fix the price or prices at which transfer shall be made. The Director of Purchase, Storage and Traffic is also authorized to prescribe a method of settlement to be made in cases of such transfer to another department of the Government. The provisions of paragraph 671, Army Regulations, inconsistent with the foregoing are to that extent modified for the duration of the present emergency. * * *

(*G. O., No. 74, W. D., August 14, 1918.*)

SURGICAL OR DENTAL OPERATION.

Submission to.

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III. .Section IV, General Orders, No. 18, War Department, 1918, is amended to read as follows:

During the present emergency the provisions of paragraph 53, Compilation of Orders, and of paragraph 220, Manual for the Medical Department, are suspended and the following substituted therefor:

In time of war if a soldier refuses to submit to dental or surgical operations or dental or medical treatment, he will be examined by a board of three medical officers convened by a department or division commander or a commander of a base or a general hospital or a commanding officer of any post where there are four or more officers of the Medical Department on duty. If, in the opinion of the board, the operation or medical or dental treatment advised is necessary to enable the soldier to perform properly his military duties, and he persists in his refusal after being notified of the findings of the board, he may be tried by court-martial under the ninety-sixth article of war. * * *

G. O., No. 29, W. D., March 26, 1918.)

SICK AND WOUNDED.

Retention and Transfer of Patients in Base Hospitals.

II. .1. The base hospitals at National Army cantonments and National Guard camps are well equipped and more or less permanent institutions, with large staffs of competent medical officers, and are intended for the treatment of the sick of the divisions, who should be retained there under ordinary conditions and not evacuated to other hospitals.

2. In case an unexpectedly large number of patients makes it necessary to provide for overflow from the base hospitals, arrangements will be made by the Surgeon General of the Army for their temporary reception in civil hospitals; and it may prove necessary to obtain such accommodations for severe cases of diseases which require special apparatus or treatment before time has permitted adequate provision for them in the special Army hospitals.

3. The division surgeons will be advised by the Surgeon General of the Army as to the available institutions which are most conveniently located with reference to the respective stations and as to the capacity of such institutions. The division surgeons will not take independent action with a view to a distribution of their patients, but will be governed strictly by directions received from the Surgeon General of the Army and will act in cooperation with and under the

advice of the specialists stationed at the camps. The Government will pay the usual hospital charges for such patients, but no charges for medical or surgical or other services in connection with them.

4. The patients who should be sent to the Army and Navy General Hospital, Hot Springs, and the manner in which they should be sent are specified in existing regulations. In view of the limited accommodation afforded by the United States Army General Hospital, Fort Bayard, no patient should be sent to it who desires discharge or whose disability is not in line of duty. Circumstances may make it necessary to retain tuberculous patients in part at base hospitals for treatment, in which case they will, so far as practicable, be quartered in wards reserved for them exclusively.

5. Appropriate cases of insanity which can be received by their friends will upon discharge be sent home. The insane not thus provided for, if their disability was incurred in line of duty, will be sent to the Government Hospital for the Insane, Washington, D. C., or to such other institutions as may be indicated by the Surgeon General of the Army. If the disability is not in line of duty, they will be returned to institutions in their own State to be cared for from State appropriations, in so far as the necessary arrangements may have been made with the authorities of the individual States.

6. Division commanders are authorized to direct the travel necessary in all classes of cases; also to provide attendants in cases in which the necessity therefor is certified to by the commanding officer, base hospital.

(*G. O., No. 133, W. D., October 11, 1917.*)

Transportation of Sick and Wounded from Overseas.

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V. The following articles of agreement governing the Army and Navy in the transportation of sick and wounded from overseas are published for the information and guidance of all concerned.

ARTICLE I. *Sick and wounded.*

(*a*) Sick and wounded being brought from France or England to the United States will be brought in Navy hospital ships or transports, whichever may be most suitable and available, except in special cases, where transportation by commercial lines may be authorized.

(*b*) The Army will be in charge of the embarkation and debarkation of all Army patients.

(*c*) The Navy will be charged with the care of these patients while on board ships of the Navy acting as transports or otherwise. At the request of the Navy, the Army will render such assistance in personnel and material as may be necessary.

(*d*) The commanding general of the American Expeditionary Forces will decide what class of patients and the numbers of each he desires returned to the United States. He will ascertain the actual number of each class that can be accommodated on each vessel from the senior naval surgeon through the commanding officer of that vessel and will not exceed that number.

ARTICLE II. *Disposition of remains of those who die in France.*

(*a*) The remains of all officers, enlisted men, and civilian employees of the Army, Navy, and Marine Corps who have died or who may hereafter die in France shall be buried in France until the end of the war, when the remains shall be brought back to the United States for final interment.

(*b*) Such cemeterial facilities as the Army may have acquired in France shall be available to the Navy.

ARTICLE III. *Disposition of remains of those who die at sea.*

(*a*) The remains of all officers, enlisted men, and civilian employees of the Army, Navy, or Marine Corps who die on board a ship en route to or from the United States shall be embalmed and returned to the United States on board the ship on which the death occurred.

(*b*) All ships engaged in transporting troops shall be equipped with the necessary personnel and material to carry the foregoing requirements into effect.

ARTICLE IV. *Enforcement.*

The War and Navy Departments will at once take the necessary steps to put the foregoing into effect.

(*Bull. No. 44, W. D., July 26, 1918.*).

Transportation for Marine Patients on Transfer.

I. . *Transportation for marine patients in Army hospitals.*—Authority is granted to furnish transportation on Army transportation requests and commutation of rations at the prescribed rate while traveling, where this is necessary, to personnel of the Navy or Marine Corps when discharged from Army hospitals. Such transportation requests will be billed, respectively, to the "Navy Department, Washington, D. C.," or to "The Quartermaster, U. S. Marine Corps, Washington, D. C." When commutation is furnished, certified statement thereof, supported by individual receipts of the men concerned, will be rendered to the same officers. * * *

(*Bull. No. 12, W. D., March 31, 1919.*)

UNITED STATES ARMY.

Definition of.

1. This country has but one Army—the United States Army. It includes all the land forces in the service of the United States. These forces, however raised, lose their identity in that of the United States Army. Distinctive appellations, such as the Regular Army, Reserve Corps, National Guard, and National Army heretofore employed in administration and command, will be discontinued, and the single term, the United States Army, will be exclusively used.

2. Orders having references to the United States Army as divided into separate and component forces of distinct origin, or assuming or contemplating such a division, are to that extent revoked.

3. The insignia now prescribed for the Regular Army shall hereafter be worn by the United States Army.

4. All effective commissions purporting to be, and described therein as, commissions in the Regular Army, National Guard, National Army, or the Reserve Corps shall hereafter be held to be, and regarded as, commissions in the United States Army—permanent, provisional, or temporary, as fixed by the conditions of their issue; and all such commissions are hereby amended accordingly. Hereafter during the period of the existing emergency all commissions of officers shall be in the United States Army and in staff corps, departments, and arms of the service thereof, and shall, as the law may provide, be permanent, for a term, or for the period of the emergency. And hereafter during the period of the existing emergency provisional and temporary appointments in the grade of second lieutenant and temporary promotions in the Regular Army and appointments in the Reserve Corps will be discontinued.

5. While the number of commissions in each grade and in each staff corps, department, and arm of the service shall be kept within the limits fixed by law, officers shall be assigned without reference to the term of their commissions solely in the interest of the service; and officers and enlisted men will be transferred from one organization to another as the interests of the service may require.

6. Except as otherwise provided by law, promotion in the United States Army shall be by selection. Permanent promotions in the Regular Army will continue to be made as prescribed by law.

(*G. O., No. 75, W. D., August 7, 1918.*)

VENEREAL DISEASES.

Interdepartmental Social Hygiene Board.

That there is hereby created a board to be known as the Interdepartmental Social Hygiene Board, to consist of the Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury as ex officio members, and of the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Public Health Service, or of representatives designated by the Secretary of War, the Secretary of the Navy, and the Secretary of the Treasury, respectively. The duties of the board shall be: (1) To recommend rules and regulations for the expenditure of moneys allotted to the States under section 5 of this chapter; (2) to select the institutions and organizations and fix the allotments to each institution under said section 5; (3) to recommend to the

Secretary of the Treasury, the Secretary of War, and the Secretary of the Navy such general measures as will promote correlation and efficiency in carrying out the purposes of this chapter by their respective departments; and (4) to direct the expenditure of the sum of $100,000 referred to in the last paragraph of section 7 of this chapter. The board shall meet at least quarterly, and shall elect annually one of its members as chairman, and shall adopt rules and regulations for the conduct of its business.

SEC. 2. That the Secretary of War and the Secretary of the Navy are hereby authorized and directed to adopt measures for the purpose of assisting the various States in caring for civilian persons whose detention, isolation, quarantine, or commitment to institutions may be found necessary for the protection of the military and naval forces of the United States against venereal diseases.

SEC. 3. That there is hereby established in the Bureau of the Public Health Service a division of venereal diseases, to be under the charge of a commissioned medical officer of the United States Public Health Service detailed by the Surgeon General of the Public Health Service, which officer while thus serving shall be an Assistant Surgeon General of the Public Health Service, subject to the provisions of law applicable to assistant surgeon generals in charge of administrative divisions in the District of Columbia of the Bureau of Public Health Service. There shall be in such division such assistants, clerks, investigators, and other employees as may be necessary for the performance of its duties and as may be provided for by law.

SEC. 4. That the duties of the division of venereal diseases shall be in accordance with rules and regulations prescribed by the Secretary of the Treasury (1) to study and investigate the cause, treatment, and prevention of venereal diseases; (2) to cooperate with State boards of departments of health for the prevention and control of such diseases within the States; and (3) to control and prevent the spread of these diseases in interstate traffic: *Provided*, That nothing in this chapter shall be construed as limiting the functions and activities of other departments or bureaus in the prevention, control, and treatment of venereal diseases and in the expenditure of moneys therefor.

SEC. 5. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of $1,000,000, to be expended under the joint direction of the Secretary of War and the Secretary of the Navy to carry out the provisions of section 2 of this chapter: *Provided*, That the appropriation herein made shall not be deemed exclusive, but shall be in addition to other appropriations of a more general character which are applicable to the same or similar purposes.

SEC. 6. That there is hereby appropriated, out of any moneys in the Treasury not otherwise appropriated, the sum of $1,400,000 annually for two fiscal years, beginning with the fiscal year commencing July 1, 1918, to be apportioned as follows: The sum of $1,000,000, which shall be paid to the States for the use of their respective boards or departments of health in the prevention, control, and treatment of venereal diseases; this sum to be allotted to each State, in accordance with the rules and regulations prescribed by the Secretary of the Treasury, in the proportion which its population bears to the population of the continental United States, exclusive of Alaska and the Canal Zone, according to the last preceding United States census, and such allotment to be so conditioned that for each dollar paid to any State the State shall specifically appropriate or otherwise set aside an equal amount for the prevention, control, and treatment of venereal diseases, except for the fiscal year ending June 30, 1919, for which the allotment of money is not conditioned upon the appropriation or setting aside of money by the State, provided that any State may obtain any part of its allotment, for any fiscal year subsequent to June 30, 1919, by specifically appropriating or otherwise setting aside an amount equal to such part of its allotment for the prevention, control, and treatment of venereal diseases; the sum of $100,000, which shall be paid to such universities, colleges, or other suitable institutions as in the judgement of the Interdepartmental Social Hygiene Board are qualified for scientific research for the purpose of discovering, in accordance with rules and regulations prescribed by the Interdepartmental Social Hygiene Board, more effective medical measures in the prevention and treatment of venereal diseases; the sum of $300,000, which shall be paid to such universities, colleges, or other suitable institutions or organizations, as in the judgment of the Interdepartmental Social Hygiene Board are qualified for scientific research, for the purpose of discovering and developing more effective educational measures in the prevention of venereal diseases, and for the purpose of sociological and psychological research related thereto.

SEC. 7. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of $300,000 for the fiscal year ending June 30, 1919, to be apportioned as follows: The sum of $200,000 to defray the expenses of the establishment and maintenance of the division of venereal diseases in the Bureau of the Public Health Service; and the sum of $100,000 to be used under the direction of the Interdepartmental Social Hygiene Board for any purpose for which any of the appropriations made by this chapter are available.

SEC. 8. That the terms "State" and "States" as used in this chapter, shall be held to include the District of Columbia. * * *

(*Bull. No. 43, W. D., July 22, 1918*).

Venereal Disease Prophylaxis—Early Treatment Stations in Cities.

1. In order to protect the military forces during demobilization, measures medical, social, educational, and legal are being utilized by the War Department to prevent venereal diseases. Experience has shown the value of the prophylactic treatment for those who expose themselves to infection. If its proper administration is delayed, however, no assurance of its effectiveness can be given.

2. Sixty-five early treatment stations are located in various cities for the convenience of soldiers and to encourage them to seek prophylaxis promptly. Other stations will be established where the need is indicated. Men who for any reason are unable to report within the safe time limit to their own infirmaries will apply for treatment at these stations. The attendants on duty will mail daily confidential reports on Form No. 77, Medical Department, to the surgeons of the organizations to which the applicants belong.

3. Direction cards regarding the stations in such cities will be posted on bulletin boards and in latrines and toilets. Where there are no facilities for printing suitable cards, they will be supplied upon application to the Surgeon General. The military police in the cities will be made acquainted with the location of the stations, although they will exercise no special surveillance over the attendants or the applicants for treatment The addresses of the early treatment stations follow:

Alexandria, Va., 102 South Washington Street.
Anniston, Ala., Gurnee Street, near Thirteenth Street.
Astoria, Oreg., the city hall.
Atlanta, Ga., Auditorium Armory, Cortland Street.
Augusta, Ga., 648 Broad Street.
Ayer, Mass., West Main Street, "U. S. Dispensary."
Baltimore, Md., 12 Clay Street.
Boston, Mass., 61 Court Street, in Scollay Square.
Brooklyn, N. Y., 5 Hanson Place, near Long Island Railroad Terminal.
Charlotte, N. C., (two stations): (1) First and Chruch Streets, (for white troops); (2) South Caldwell Street, between First and Second Streets, (for colored troops).
Chattanooga, Tenn., Market and Main Streets.
Chicago, Ill., at six railway stations: (1) Northwestern Railway Station, (2) Union Depot, (3) La Salle Station, (4) Grand Central Station, (5) Polk Street Station,(6) Illinois Central Station.
Columbia, S. C., Main and Washington Streets.
Dallas, Tex., the city hall.
Dayton, Ohio, the city building, Main Street.
Des Moines, Iowa, the Coliseum, First and Locust Streets.
Detroit, Mich., 287 Woodward Avenue.
El Paso, Tex., Campbell and First Streets.
Fort Worth, Tex., (two stations): (1) Eighth and Houston Streets, (for white troops); (2) Ninth and Jones Streets, (for colored troops).
Galveston, Tex., 314 Tremont Street, (Army and Navy canteen).
Greenville, S. C., Finlay Building, 304 North Main Street.
Hattiesburg, Miss., 128 West Pine Street.
Hopewell, Va.
Houston, Tex., Municipal Auditorium.
Indianapolis, Ind., 129 South Washington Street.
Jacksonville, Fla., Professional Building, Hogan near Main Street.
Kansas City, Mo., 1310 Walnut Street.
Lawton, Okla., Fifth Street between C and D Avenues, opposite court house.
Little Rock, Ark., basement, county court house, Second and Spring Streets.
Lowell, Mass., 406 Middlesex Street.
Macon, Ga., Mulberry and Third Streets.
Montgomery, Ala., 15½ South Court Street.
Mount Holly, N. J.
Newport News, Va., attending surgeon's office, Twenty-third Street.
New York, N. Y., (three stations): (1) 223 West Thirty-fourth Street, (opposite Pennsylvania terminal); (2) Fort Lee Ferry (One-hundredth and thirtieth Street): (3) Weehawken Ferry (West Forty-second Street).
Newark, N. J., 266 Market Street.
Oklahoma City, Okla., Empire Building, 124 West Main Street.

Petersburg, Va., 19 Bank Street.
Philadelphia, Pa., 28 North Twelfth Street.
Portland, Oreg., Emergency Hospital, Second and Oak Streets
Richmond, Va., 633 Broad Street, at Seventh Street.
San Antonio, Tex., 118 Dwyer Street.
San Diego, Calif., military police headquarters.
San Francisco, Calif., (the five emergency hospitals): (1) Central—Polk Street and Grove Avenue; (2) Harbor—9 Clay Street between Drum and Embarcadero Streets; (3) Mission—Twenty-Second Street and Potrero Avenue; (4) Park—Stanyan Street between Height and Central Streets (5) Potrero—2312 Third Street.
Savannah, Ga., 119 West Broad Street.
Seattle, Wash., Fourth and Cherry Streets, (Service Club).
St. Louis, Mo., municipal building, Twelfth and Market Streets.
Tacoma, Wash., municipal dock, foot Eleventh Street.
Topeka, Kans., Kansas Avenue and Sixth Street.
Trenton, N. J., 31 South Warren Street.
Waco, Tex., city hall, Austin Street.
Washington, D. C., Sixth and B Streets, NW.

(*Cir. No. 104, W. D., December 2, 1918.*)

Sex Morality.

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II. .*Sex morality.*—The statements herein defining the attitude of the War Department toward sex morality are published for the information and guidance of all concerned. The responsibility and influence of officers in making effective the provisions of this order are of the greatest import, and the War Department looks to them to accord their undivided allegiance to this work which presents such large opportunity for national service.

1. The successful experience of the Army in combating venereal disease during the World War indicates clearly that—

(*a*) Continence is not prejudicial to health, and its maintenance is the only sure method of avoiding venereal diseases. Measures encouraging it has proved most effective in keeping down rates of venereal disease.

(*b*) Prophylaxis is a measure of disinfection which is provided solely to protect exposed men from the results of their folly and to save their services to the Government. It is not in any sense an expression of approval by the War Department of illicit intercourse. Its use appears to reduce the liability to venereal disease among those exposed to about one-third of what it would be without prophylaxis.

2. On the basis of the foregoing, it is announced as the policy of the War Department to continue to promote sex morality by—

(*a*) Encouragement of continence.
(*b*) Encouragement of efforts to eliminate prostitution.
(*c*) Provision of supervised medical prophylactic facilities for men exposed to disease.
(*d*) Thorough treatment of disease acquired.
(*e*) Punishment for failure to use prophylaxis after exposure.

3. Continence can best be encouraged by creating a strong community sanction for clean and healthy living. Positive agencies to promote continence are:

(*a*) Active military training.
(*b*) Effective educational, vocational, and moral training.
(*c*) Healthy recreation in the camp, with special emphasis on athletics.
(*d*) Sound instruction in hygiene.

4. Existing courses in hygiene in the school system of the Army include the subject of sex hygiene. Lectures on this subject have regularly been given to the soldiers of the Army by medical officers on duty with troops. Sex morality will be presented to the Army in a positive form and not alone in its aspect of venereal disease prevention. Commanding officers will, using the agencies available, establish a course in sex morality which will be given to all officers below field rank and to all soldiers. This course will present the subject of sex morality from the sanitary, the social, and the moral point of view. It will be presented by medical officers, line officers, and chaplains. It will be given a definite period in the yearly schedule. Advice and assistance in the form of lecture outlines for surgeons and for company officers, pamphlets, and lantern slides will be furnished on requisition to the Surgeon General. Picture films and steromotographs will

be furnished on requisition to department surgeons. Upon completion of this course, the fact of completion will be noted on the service record of each soldier and a certificate of completion will be given to all officers below field rank. The course will be attended by such officers and soldiers but once, unless the commanding officer deems additional attendance requisite.

5. When vice conditions in neighboring communities appear to have an unfavorable influence upon his command, the commanding officer will request the civil authorities to initiate action to better them, and will avail himself of the good offices of representatives of nonmilitary organizations in his vicinity which are working for that object. Houses of prostitution accessible to members of the command will be declared "off limits" by commanding officers. Particular attention is directed to Chapter XV, act of Congress approved July 9, 1918 (p. 56, Bull. No. 43, W. D., 1918), which gives the status of the Interdepartmental Social Hygiene Board. Department commanders and post, camp, or station commanders will get in touch with its local representatives, inform themselves as to their facilities, and seek their cooperation toward the production of an environment without the station and such a relationship with civil communities as will support their military efforts within.

6. Existing orders on physical inspection, prophylaxis, and treatment of venereal disease will be maintained in full force and effect. In the application of the provisions of paragraph 15, Special Regulations, No. 28, War Department, 1917, commanding officers are authorized to excuse married men of good character. In the application of the third subparagraph of paragraph 13, Special Regulations, No. 28, a certificate will be furnished each man receiving prophylaxis showing his name, rank, organization, date, place, and hour of the prophylaxis, and signed by the attendant in charge of the prophylactic station.

7. For every post, camp, or station there will be compiled each week as of Friday night a report of venereal disease in the form shown below, setting forth information thereon in regard to each regiment or other separate organization in the command. The commanding officer will send copies of it to organization commanders under him, calling for explanations from those whose organizations show high rates. This report will then be transmitted by the commanding officer to the next higher commander with explanatory remarks relating to annual incidence rates above 100, statements of corrective measures taken, and other matters of interest relating to the subject. Department commanders receiving such reports will make a consolidated report for all posts, camps, or commands under them and transmit it promptly to The Adjutant General of the Army with necessary information or explanations, and also send copies of this consolidated report to commanders under their jurisdiction. The Surgeon General of the Army will each week publish a comparison of rates in different departments and camps directly under the jurisdiction of the War Department, sending it out to all such commands. It is important that information derived from such reports be given the earliest attention possible, in order that correction may follow promptly upon discovery of bad conditions. The venereal incidence of an organization will be an indication to commanding officers of the efficiency of subordinates in carrying out this order. * * *

(G. O., No. 135, W. D., December 23, 1919.)

VETERINARY CORPS.

National Army.

* * * * * * *

III. 1. The President directs that under the authority conferred by section 2 of the act "To authorize the President to increase temporarily the Military Establishment of the United States" approved May 18, 1917, there be organized for the period of the existing emergency a Veterinary Corps, National Army, to consist of the commissioned and enlisted personnel hereinafter specified.

2. The total number of commissioned officers and enlisted men may be approximately equal to, but shall not exceed, 1 commissioned officer and 16 enlisted men for each 400 animals in service; the veterinarians and assistant veterinarians of the Regular Army, National Guard, drafted into the Federal Service, and Officers' Reserve Corps in active service, shall be considered as a part of the total commissioned personnel herein authorized.

3. The commissioned personnel shall consist of veterinarians and assistant veterinarians and the grades and the ratios in grades shall be as follows:

Seven veterinarians with rank of major to 20 veterinarians with rank of captain, to 36 assistant veterinarians with rank of first lieutenant, to 37 assistant veterinarians with rank of second lieutenant.

In no case shall original appointments or promotions be made so as to make the ratio between any of the grades above that of second lieutenant to the grade next below it above the ratio specified.

4. The enlisted personnel shall consist of men of the grades indicated below and the proportions of these men shall not exceed those indicated. In each 200 enlisted men there may be 5 sergeants first class, 10 sergeants, 10 corporals, 40 farriers, 2 horseshoers, 1 saddler, 3 cooks, 43 privates first class, 86 privates.

5. The Surgeon General will submit recommendations to the Secretary of War for the commissioned and enlisted personnel now required for the organization authorized above, which, upon approval by the Secretary of War, shall be put into effect. The organization of the Veterinary Corps will be subsequently increased or decreased as the needs of the service require upon recommendations by the Surgeon General after they have been approved by the Secretary of War. * * *

(*G. O., No. 130, W. D., October 4, 1917.*)

Personal Equipment for Enlisted Men.

II..The personal equipment for enlisted men of the Veterinary Corps will be the same as prescribed for enlisted men of Cavalry, omitting the rifle and saber and substituting the pistol belt for the cartridge belt. The horse equipment will be the same as authorized for mounted troops. * * *

(*G. O., No. 8, W. D., January 19, 1918.*)

Appointments and Reduction, Enlisted Personnel, Veterinary Corps.

IV..1. The following methods of appointments and reduction of the enlisted personnel of the Veterinary Corps will govern during the existing emergency:

(*a*) In divisions the division veterinarian may promote enlisted men of the Veterinary Corps up to the authorized allowance and may sign warrants "for the Surgeon General."

(*b*) In veterinary, base veterinary, corps veterinary, and Army mobile veterinary hospitals the enlisted personnel of the Veterinary Corps will be promoted by the veterinarian in charge, who may sign warrants "for the Surgeon General," except that while any of these units are in a training school any appointment must be approved by the senior veterinary instructor.

(*c*) In veterinary detachments assigned to auxiliary remount depots, or to remount squadrons, or to any other detached command, the sergeants first class, sergeants, and corporals will be issued warrants by the Surgeon General upon recommendation of the veterinarian. Farriers, horseshoers, cooks, privates first class, and saddlers will be appointed by the veterinarian.

2. Any veterinarian may make reductions when in his judgment the same may be necessary, provided that the officer ordering the reduction shall have the power to fill the vacancy thus created.

(*G. O., No. 58, Section IV, W. D., June 22, 1918.*)

Enlisted Personnel.

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IV..*Enlisted personnel, Veterinary Corps.*—1. Under authority contained in that portion of section 10 of the act of Congress approved June 3, 1916 (Bull. No. 16, W. D., 1916), which authorizes the Secretary of War in time of actual or threatened hostilities to enlist or to cause to be enlisted in the Medical Department such additional number of men as the service may require, the following additional strength is authorized for the Medical Department:

Master hospital sergeants	7
Hospital sergeants	8
Sergeants first class	45
Sergeants	150
Corporals	75
Cooks	60
Horseshoers	30
Stable sergeants	300
Saddlers	15
Mechanics	30
Privates first class	645
Privates	135
Total	1,500

2. The personnel so authorized will be enlisted in the Medical Department, but will be assigned to duty with the Veterinary Corps. This personnel will include all men heretofore enlisted and assigned to the Veterinary Corps under the provisions of Circular No. 141, War Department, 1919, as amended by Circular No. 268, War Department, 1919.

3. Within the limits of the authorization in paragraph 1, Veterinary Corps personnel will be organized and assigned to duty by the Surgeon General in accordance with the needs of the service. This authority will be construed as permitting the Surgeon General to organize such units and detachments of the type heretofore approved as he may deem necessary without further reference of the matter to higher authority: *Provided,* That the strength of units and detachments forming a part of the combatant organizations shall conform to that indicated in approved tables of organization and War Department orders. The Surgeon General will be prepared at all times to render a report showing the actual distribution of the authorized personnel.

(*G. O., No. 127, W. D., November 17, 1919.*)

WAR RISK INSURANCE.

Information and Assistance to be Given Disabled Men in Making Claim for Compensation.

1. It has been brought to the attention of the War Department that the requirements of paragraph 2, Circular No. 82, War Department, 1918, are not being observed. Copies of reports of physical examination of enlisted men prior to separation from the service (Form No. 135–3, A. G. O.) are being sent to the Bureau of War Risk Insurance without being attached to the compensation application blank (Treasury Department, B. W. R. I. Form 526). Also reports of physical examination are being forwarded to the Bureau of War Risk Insurance regardless of whether or not the soldier claims any physical disability or is found to have any disability by the examining surgeon.

The requirements of paragraph 2, Circular No. 82, War Department, 1918, will be strictly complied with and copies of the reports of physical examination will be forwarded to the Bureau of War Risk Insurance only as prescribed therein.

2. Paragraphs one and two of the instructions on the front page of the application of the person disabled in and discharged from the service (Treasury Department, B. W. R. I. Form 526) may be disregarded when the application is made out by the disabled person in camp and forwarded from the camp to the Bureau of War Risk Insurance with a copy of the report of physical examination (Form No. 135–3, A. G. O,), or surgeon's certificate of disability. A certified copy of the soldier's certificate of discharge is not required when the application comes directly from the camp or Army hospital through channels, and the report of an attending or examining physician on Treasury Department, B. W. R. I. Form 504, is made unnecessary by the copy of the report of physical examination on Form No. 135–3, A. G. O., or surgeon's certificate of disability, which are supposed to accompany the compensation claim.

3. Where the officer or enlisted man claiming compensation is married, has children, or a dependent father or dependent mother, Treasury Department. B. W. R. I. Form 526, executed by him at camp will be stamped "Original" and he will be furnished with a second Form 526, stamped "Supplemental," so that he can incorporate in the blank affidavit on the last page of the form the proof required in support of his claim relative to marriage, birth of children, and dependency. In order to assist him in securing the proper supplementary proof, paragraphs on the front page of the application incorporating the supplementary proof required in his particular case will be marked or checked in some distinguishing manner by the officer furnishing him with the application.

4. Every officer or enlisted man who executes a claim for compensation will be advised to notify the Compensation Section, Bureau of War Risk Insurance, Treasury Department, Washington, D. C., of any change in his address that may occur after his separation from the service.

(*Cir. No. 49, W. D., January 28, 1919.*)

Execution of Allotment and Compensation Forms for Insane Patients.

The following decision of the Bureau of War Risk Insurance is published for the information and guidance of all concerned:

In the case set forth by the personnel adjutant of the Walter Reed Hospital, it is stated that the mother of an enlisted man, now a psychopathic patient at that hospital, requests that a class

B allotment be provided for her by her son. In his present mental condition, the soldier is not capable of executing a class B allotment.

Colonel Bartlett requests a ruling in regard to the execution of allotment form in cases similar to the one just stated.

Class B allotments are entirely voluntary and must be executed by the enlisted man himself. Therefore, as the enlisted man is in such a mental condition that he can not understand the nature of his act, he can not execute a class B allotment. Furthermore, as the class B allotment is voluntary, no one can act in his behalf to execute such an allotment.

Class A allotments are compulsory and an award of an allotment of an enlisted man's pay and the Government allowance can be made by this bureau upon application of members of class A.

Colonel Bartlett also asks if a guardian or committee should be appointed to represent soldiers who, while insane patients in the hospital, directly or indirectly make claim for the benefits of the war risk insurance act.

No guardian or committee need be appointed to represent an enlisted man for the purpose of looking after his allotments for the reasons stated in paragraphs 3 and 4.

No guardian or committee need be appointed to represent an officer or an enlisted man who, while an insane patient, makes claim for compensation under the war risk insurance act. While such officer or enlisted man is in active service he is not entitled to compensation. War Department Circulars Nos. 73, 82, and 132 provide that compensation may be claimed at the time of discharge and after such claim is made that a critical medical examination be given and that a copy of the claim and a report of the physical examination be forwarded directly to the Bureau of War Risk Insurance. If such officer or enlisted man is mentally incapable of making claim for compensation, claim may be made in his behalf by the insurance officer, personnel adjutant, or the commanding officer. Upon receipt by this bureau of a claim for compensation made either by the insane patient himself or some one in his behalf, proper steps will be taken to have a committee or guardian appointed.

(*Cir. No. 162, W. D., March 31, 1919.*)

Insane, Care of Compensable.

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III..*Care of compensable insane.*—Subparagraph (*b*), paragraph 2, Section VII, General Orders, No. 57, War Department, 1919, is amended to read as follows:

(*b*) At the same time a case is reported to the Bureau of War Risk Insurance a certificate of disability will be forwarded to the authority designated to order discharge in such cases, who will, if he approves the discharge, return the certificate to the patient's commanding officer for appropriate action as hereinafter prescribed. The commanding officer, having been authorized to discharge the patient, will, upon receipt of the instructions requested of the Bureau of War Risk Insurance, deliver the patient, accompanied by the necessary attendants, to the institution designated. When the patient has been delivered to the institution, the senior attendant will telegraph the commanding officer report of such delivery, who thereupon, and not before, will complete the discharge. The procedure regarding the preparation and disposal of records prescribed in Army Regulations for the discharge of insane in the military service, and their delivery to institutions, will be applied also in these cases, except that the medical certificate required by the Department of the Interior, Form 1–107, for patients sent to St. Elizabeths Hospital, need not be filled out. Upon completion of the patient's discharge as above indicated his commanding officer will send his discharge certificate and final papers to the institution to which the patient was sent, for delivery to the patient, and will at the same time, in writing, advise the Bureau of War Risk Insurance of the action taken. * * *

(*G. O., No. 96, W. D., July 30, 1919.*)

WELFARE SOCIETIES.

Fraternal and Benevolent Societies at Camps.

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VI..Pursuant to an understanding reached at the conference between the Secretary of War, the chairman of the Commission on Training Camp Activities, and representatives of all the large fraternal orders in the United States with regard to the activities of such orders in the training camps, the following order is promulgated:

Fraternal and benevolent societies of recognized and well-established character, either independently or associated together under rules prescribed by the Secretary of War and to the extent that available ground can be had, or available space in buildings already erected can be spared for the purpose, may erect, establish, or occupy buildings or such space in buildings already erected for fraternal and social work and service among the members of such societies in the camps and cantonments of the United States, after first obtaining permission from the officer in command.

No secret meetings shall be allowed, nor shall any secret, fraternal, or benevolent society conduct any secret work in said camps or cantonments under the authority of this order. * * * (*G. O., No. 2, W. D., January 7, 1918.*)

SPECIAL REGULATIONS NO. 28, 1917.

Sanitary Regulations.

1. *Responsibility for sanitation.*—Commanders of all grades are responsible for police and sanitation and for the enforcement of the provisions of these regulations within their organizations.

2. *Division surgeon.*—The division surgeon is charged, under the commanding general, with the general conduct and supervision of the Medical Department of the division in the performance of its duties, and will make recommendation concerning all matters pertaining to the sanitary welfare of the command.

3. *Sanitary inspector.*—The sanitary inspector is assistant to the division surgeon, and is charged especially with the supervision of the sanitation of the command to which he is assigned. It is the duty of organization commanders to remedy defects reported to them with the least possible delay.

4. *Sanitary squads* will be organized by the division surgeon for special sanitary purposes, such as the purification of water supplies, mosquito and fly prevention, disposal of wastes, and disinfection. They will consist of officers, noncommissioned officers, and privates first class, or privates of the Medical Department, assisted by civilian sanitary laborers employed by the Quartermaster Corps, and, when necessary, by details of officers and enlisted men from other branches of the service.

5. *Water supply.*—In the field water must not be used for drinking purposes until it has been pronounced fit for use by a medical officer. Care must be taken to prevent contamination of stored water by keeping all containers scrupulously clean and covered in such manner as to prevent "dipping," and the entrance of dust and other sources of infection. The use of a common drinking cup will not be permitted.

An appliance carried on the supply table as "Water bag, field, sterilizing," consists of a 40-gallon canvas bag of specially woven flax, 20 inches in diameter and 28 inches in length. The purpose of the bag is not to transport water, but to provide a stationary receptacle in which water can be held long enough to sterilize, and then be distributed. The empty bag weighs from 7 to 7½ pounds and folds into a convenient package for carriage in the field, for which purpose it was especially designed. After the bag is suspended and filled, the water is sterilized by the addition of a small amount of hypochlorite of calcium. This is carried in measured doses, sealed in glass tubes. The process is one of oxidation. In the strength used waters highly infected are rendered safe. Water ordinarily used will be entirely safe after being so treated. As the chemical acts more efficiently in clear waters, a filter cloth, to be fastened over the opening of the bag and weighing 1 ounce is provided, or water may be strained through a blanket. Suspended matter, such as clay, is largely removed and not left to interfere with the action of the chlorin. The bag is filled after it is put in place.

6. *Kitchens and mess halls.*—Kitchens and mess halls will be securely screened and flytraps provided for catching fies that gain entrance. An effective flytrap consisting of a light wooden frame covered with wire gauze, extending to about one-eighth of an inch from the floor of the trap, is readily constructed. Sweetened water, slightly acidulated with vinegar, is an excellent bait. Fly paper may also be used. All food, food receptacles, dishes, and tableware will be protected from flies and dust. Unit commanders will see that an ample supply of hot water and dish towels are provided for cleansing cooking utensils, dishes, and mess kits. Ice boxes will be kept elevated at a height sufficient to allow for inspection and cleansing. Drip pans will be emptied and scalded out daily.

6½. *Examination of permanent food handlers.*—At military stations where the necessary facilities are available, either through local or department laboratories, no person will be employed as a "permanent food handler" until it has been determined, by at least one satisfactory examination of the stools and urine, that he is not a carrier of the bacilli of typhoid, paratyphoid, or dysentery. Where cholera is endemic or epidemic the examination should also include search for the cholera vibrio. The term "permanent food handler" will be construed to mean all persons who regularly handle uncovered food, such as cooks, assistant cooks, bakers, dietitians, mess sergeants, butchers, milkers and other milk handlers, attendants in exchanges who dispense ice cream, milk, and bottled goods, and any other person who comes in constant and intimate contact with food. This examination will be repeated every six months in the case of individuals constantly employed.

Company, troop, battery, and detachment commanders, officers in charge of bakeries and of special messes, officers in command of hospitals, and exchange officers will report in writing to the surgeon the names of all permanent food handlers under their jurisdiction. The camp, division, post, or other senior surgeon of a command will take the necessary steps to have these men examined and the result of the examination reported to the organization commander without delay.

The triple typhoid inoculation confers a high degree of protection against typhoid and paratyphoid fever but it does not give absolute protection against massive infections with the causative organisms. The use of the triple inoculation has enormously reduced the incidence of enteric fevers in armies, but its use does not warrant neglect of the other well-known sanitary precautions against these diseases. One of the most ready means of causing massive infection with typhoid and paratyphoid organisms is through the agency of a "carrier" employed in the handling of food. (*S. R. No. 28, C. No. 4, March 11, 1919.*)

7. *Food and drinks.*—No food or like commodities will be sold in camp except in the authorized exchanges.

Bills of fare should be prepared in advance and adhered to as far as is practicable.

Attention is called to the use of the following foods, the elimination of which from the messes will serve to prevent a variety of intestinal disorders:

(*a*) Canned milk and fish opened the day before. (Milk and fish poisoning.)

(*b*) Hashes of meats and potatoes prepared the night previous. (Ptomaine poisoning of severe type.)

(*c*) In certain localities green vegetables, uncooked. (Dysenteries and diarrhea.)

8. *Baths and lavatories.*—Careful inspection will be made daily to see that waste water is so disposed of as to prevent mosquito breeding and other nuisances.

9. *Disposal of garbage.*—For detachments or companies in camps or in isolated locations where other means of disposal are not available, an incinerator will be installed of a type approved by the sanitary inspector. The Guthrie incinerator may be used, detail drawing for the construction of which may be found in the Manual for the Quartermaster Corps. Where disposal in a sanitary manner can be made by cartage, the garbage may be carried away in the can and disposed of. The returned can will be thoroughly cleansed. Cans will be kept tightly covered on open stands.

10. *Care of picket lines and disposal of manure.*—Picket lines will be kept broom swept, and all manure and straw hauled away daily and burned, or otherwise disposed of as directed by the sanitary inspector. A weekly incineration of the picket lines will be accomplished with the use of crude oil. Crude oil may be obtained from the Quartermaster Corps on usual requisition.

11. *Disposal of excreta.*—In permanent camps where a water-carriage system is not installed, the Havard or other fly-tight box and pit latrine will be used. Each day the pit will either be burned out or sprayed with a lampblack or bone-black mixture. If burned out, 1 gallon of crude oil and 15 pounds of hay or straw should be used. A satisfactory mixture for spraying consists of one-half pound of lampblack to a gallon of kerosene, or 1 pound of bone black to 3 gallons of crude oil. Spraying should be done preferably with a spray pump. Both the interior of the box and of the pit should be kept thoroughly coated with the mixture. Detail drawing of the Havard box may be found in the Manual for the Quartermaster Corps. The box must be kept fly-tight. This implies closure of all cracks and care of hinges and back construction, so that the lids drop automatically. The latrine seats will be scrubbed with soap and water daily, and washed off at least twice weekly with a $\frac{1}{100}$ solution of creolin or other disinfectant. When filled to within 2 feet of the top, pits will be filled with earth to within 6 inches of the surface and covered with a layer of sacking, soaked in crude oil to extend 3 feet beyond the edges of the pit; the pit will then be filled in with earth and the location marked. Urinal cans will be placed in the camp streets at night

and removed in the morning, emptied, and burned out. Facilities for washing the hands should, if possible, be provided in each latrine.

12. *Personal cleanliness.*—Every member of the command will bathe at least twice weekly. Army Regulations (par. 286) require that the men shall wash their hands before each meal and immediately after visiting the latrines. Teeth will be cleansed with a brush at least once a day. Underwear should be frequently changed. Bedding and clothing will be sunned and tent walls raised daily, weather permitting. Barracks and tents will be adequately ventilated. Tents will be furled or struck frequently, so that the sites may be thoroughly sunned.

13. *Venereal diseases.*—The cause of these diseases is a matter of common knowledge. They are entirely preventable, and the Government punishes those who expose themselves and contract venereal disease by prompt stoppage of pay and restriction of privileges while under treatment.

It is enjoined upon all officers serving with troops to do their utmost to encourage healthful exercise and physical recreation, and to supply opportunities for cleanly social and interesting mental occupations for the men under their command; to take advantage of favorable opportunities to point out, particularly to the younger men, the inevitable misery and disaster which follow upon intemperance and moral uncleanliness, and that venereal disease, which is almost sure to follow licentious living, is never a trivial affair. Although the chief obligation and responsibility for the instruction of soldiers in these matters rests upon company officers, the medical officers should cooperate by occasional lectures or other instruction upon the subject of sexual physiology and hygiene, and the dangers of venereal infection.

Commanding officers will require that men who expose themselves to the danger of contracting venereal disease shall at once, upon their return to camp or garrison, report to the hospital or dispensary for the application of such cleansing and prophylactic treatment as may be prescribed by the Surgeon General. Any soldier who fails to comply with such instructions, if found to be suffering from a venereal affection, shall be brought to trial by court-martial for neglect of duty.

Cases of these diseases will be promptly subjected to treatment, but not necessarily excused from duty unless, in the opinion of the surgeon, it is deemed desirable. They will be made of record in the medical reports in any case. A list of those diseased but doing duty will be kept both by the company or detachment commander and the surgeon, and the infected men will be required to report to a medical officer for systematic treatment until cured. While in the infectious stages the men should be confined strictly to the limits of the post. When a venereal case, whether or not on sick report, is transferred to another command, the surgeon will send a transfer slip giving a brief history of the case.

14. *Fitting of shoes and care of feet.*—Company commanders are charged with personal supervision of fitting the shoes of the men of their commands, and will be held responsible that instructions herein contained are followed and that their men are required to wear shoes properly fitted. To determine the fact of fit the shoes will be laced snugly, and the soldier, with a 40-pound burden upon his back, will throw his entire weight on one foot. The officer or noncommissioned officer fitting the shoe will then press in the leather of the shoe in front of the toes to determine the existence of sufficient vacant space in that region to prevent toe injury. Under no circumstances should this vacant space in front of the great toe be less than two-thirds of an inch, nor should there be pressure on the top of the toes. The officer or noncommissioned officer will then grasp with his hand the leather of the shoe over the ball. As his fingers and thumb are brought slowly together over the leather the shoe should feel snugly filled without apparent tension, while the leather should lie smoothly under the hand. If the leather wrinkles under the grasp of the hand, the shoe is too wide and a narrower width is needed; if the leather seems tense and bulgy and the hand tends to slip over easily, the shoe is too narrow and a greater width is necessary.

Usually it will be necessary to try on several pairs of shoes in this manner before an entirely satisfactory shoe is secured. No shoes will be issued or worn by enlisted men which are not fitted in accordance with this order.

All shoes should be properly broken in before beginning a march. The following is required:

The soldier stands in his new shoes in about 2½ inches of water for about five minutes until the leather is thoroughly pliable and moist; he should then walk for about an hour on a level surface, letting the shoes dry on his feet, to the irregularities of which the leather is thus molded in the same way as it was previously molded over the shoe last. On taking the shoe off a very little neat's-foot oil should be rubbed into the leather to prevent its hardening and cracking.

If it is desired to waterproof the shoes at any time, a considerable amount of neat's-foot oil should be rubbed into the leather.

Shoes issued to enlisted men will be regularly inspected by company commanders to see that waterproofing substance is applied often, and that they are not injured by being placed too near heating apparatus. Heat ruins leather and causes wet leather to rapidly decompose. (*S. R. No. 28, C. No. 1, Apr. 1, 1918.*)

Light woolen or heavy woolen socks will habitually be worn for marching; the socks will be large enough to permit free movement of the toes, but not so loose as to permit of wrinkling. Darned socks, or socks with holes, will not be worn in marching.

Company commanders, by frequent inspections throughout the year, will maintain the feet of their men in condition for proper marching. They will cause the proper trimming of nails, *removal of pressure from corns and callouses*, relief of painful bunions, treatment of ingrowing nails, and other defects, sending serious cases to the surgeons.

Before a march is undertaken by foot troops company commanders will personally inspect the bare feet of their men. While on the march they will personally see each day that their men wash their feet as soon as possible after reaching camp, prick and evacuate blisters, and cover such blisters or excoriations with zinc oxide plaster, supplied by the Medical Department, applied hot, dust the feet with the foot powder supplied by the Medical Department, and put on clean socks. An undue amount of foot injury and disability from shoes will be regarded as evidence of inefficiency on the part of the officers concerned, and as causes for investigation.

Quartermasters will provide a place where shoes may be fitted for the purpose of determining or verifying the record to be kept in each company, troop, battery, and detachment of the proper sizes of shoes required for each enlisted man thereof. For the purpose of fitting they will keep on hand at all times a complete series of each size and width of shoes furnished for issue. Company commanders will report in writing to the next higher commander every instance of failure to secure proper shoes for their commands, or to obtain proper facilities for fitting the shoes as herein directed. Commanders will investigate the reasons for and be held responsible as far as lies in their power for the rectification of such deficiencies.

A brief record of the number of such reports from company commanders and the reason for such deficiencies will be furnished to inspectors at each inspection.

Inspections conducted under the provisions of paragraph 889, Army Regulations, will embrace an inquiry into the manner in which this order has been complied with, and the report of inspections will include a statement of all instances of failure on the part of company commanders to secure proper shoes for their commands and the cause of such failure.

14. (Changed by S. R. No. 28, C. No. 3, W. D., 1918.)—*Fitting of shoes and care of feet.*— With the view of increasing the marching capacity of troops, company, troop, battery, and detachment commanders will personally satisfy themselves that the men of their commands have been properly measured and fitted with shoes and socks, and will be held responsible that the instructions herein contained as to care of feet are strictly followed, and that their men are required to wear shoes and socks properly fitted.

Foot-measuring machines and shoe-fitting devices will be supplied by the Quartermaster Corps in such numbers as may be needed at each camp and garrison post in the United States, the Philippine, Panama Canal, and Hawaiian Departments for use in fitting shoes. The use of the measuring machines and the fitting devices is to be under the general supervision of the unit supply officers and supply officers of depot brigades, to whose offices will be attached personnel properly instructed in measuring and shoe fitting. A record of the proper size and width of shoes as determined by use of the foot-measuring machines and shoe-fitting devices and of the proper size of woolen sock will be kept by company, troop, battery, and detachment commanders.

DIRECTIONS FOR OPERATING "RESCO" FOOT-MEASURING MACHINE.

(*a*) After taking the machine from its box, open it wide by moving the lever as far front as possible and pulling out the plunger as far as it will go. The machine is now ready for use.

(*b*) Let the man put his foot in the machine and stand with all his weight. The heel should rest firmly against the heel block. It is important that the foot should rest in the exact center of the machine.

(*c*) Release lever which operates the width indicator and push the plunger until the plate touches the toe. Do not touch the plunger again while the foot is in the machine. Make sure that the metal side pieces touch the toe joints.

(*d*) Then let the man throw his entire weight on the ball of his foot, raising the heel slightly.

(*e*) The width is automatically registered by the arrow. As the arrow wavers, following the action of the heel up and down, take the average of the extremes. (Example: If the arrow wavers from width "b" to width "d," use width "c.") The correct size of the shoe is indicated by the pointer on the plunger on the right-hand scale.

(*f*) Measure the other foot in the same manner, and if there should be a difference, select size to fit the longer foot and the narrower width.

(*g*) Oil the slide under the device occasionally.

NOTE.—Verify the length selected by testing with shoe-fitting device.

INSTRUCTIONS FOR USING THE SHOE-FITTING DEVICE.

(*a*) Select from the several measuring devices in the set the one marked with the size or half size corresponding with the shoes to be tried on.

(*b*) Insert the knob end of the device into the toe of the shoe, springing the other end of device down to the inner sole, against the counter.

(*c*) The middle of the flat spring piece will lie flat with slight pressure of the foot.

(*d*) If the soldier, with pack and rifle on his back, can *without discomfort* pace back and forth in shoes with device inserted, the shoes will be sufficiently long to allow for foot expansion when device is withdrawn.

NOTE.—The shoes must *in every case* pass satisfactorily the above described test.

Shoes of the size indicated by measuring machine, fitted with the proper shoe-fitting device, will be laced snugly; and the soldier, with a 40-pound burden on his back, will throw his entire weight upon one foot. The officer or enlisted man will grasp with his hand the leather of the shoe over the ball. As his fingers and thumb are brought slowly together over the leather the shoe should feel snugly filled without apparent tension, while the leather should lie smoothly under the hand. If the leather wrinkles under the grasp of the hand the shoe is too wide and a narrower width is needed; if the leather seems tense and bulgy and the hand tends to slip over easily, the shoe is too narrow and a greater width is necessary. Usually it will be necessary to try on several pairs of shoes in this manner before an entirely satisfactory shoe is secured. No shoes will be issued or worn by enlisted men which are not fitted in accordance with this order.

When foot-measuring machines and shoe-measuring devices are not available, the procedure in determining the fact of fit of the shoes will be the same as contained in the preceding paragraph. The officer or enlisted man fitting the shoe will also press in the leather of the shoes in front of the toes to determine the existence of sufficient vacant space in that region to prevent toe injury. Under no circumstances should this vacant space in front of the great toe be less than two-thirds of an inch, or the width of a man's thumb, nor should there be pressure on top of the toes.

Measurements will be taken and shoes will be fitted as soon as practicable after the enlistment or induction of the soldier into the service, and the record will be changed from time to time if subsequent fittings render a change necessary.

Sizes called for in the requisitions will conform to the record, and the fact of fit of shoes and socks issued on such requisition will be personally verified in every instance by a company, troop, battery, or detachment officer.

New shoes should be adapted to the contours of the feet as soon as possible. Shoe stretchers, with adjustable knobs to take pressure off painful corns and bunions, are issued by the Quartermaster Corps.

All shoes and socks must be properly broken in before beginning to march. The following is suggested, but not required: The soldier stands in his new shoes in about 2½ inches of water for about five minutes, until the leather is thoroughly pliable and moist; he should then walk for about an hour on the level surface, letting the shoes dry on his feet, to the irregularities of which the leather is thus molded in the same way as it was previously molded over the shoe last. On taking the shoes off a very little neat's-foot oil should be rubbed into the leather to prevent its hardening and cracking.

If it is desired to waterproof the shoes at any time, a considerable amount of dubbin should be rubbed into the leather.

Shoes issued to enlisted men will be regularly inspected by company, troop, battery, and detachment commanders to see that waterproofing substance is applied often, and that they are not injured by being placed too near heating apparatus. Heat ruins leather and causes wet leather to decompose rapidly.

Light or heavy woolen socks will be worn habitually for marching; the socks will be large enough to permit free movement of the toes, but not so loose as to permit of wrinkling. Darned socks or socks with holes will not be worn in marching. (This is not to be construed, however as prohibiting soldiers from wearing properly darned socks while on ordinary duty, at drill, etc. If on marches two pairs of socks are worn, the outer pair may be darned socks.) Woolen socks will shrink about one size after being washed a few times. Proper fitting of socks must be secured under personal supervision of a company, troop, or battery officer.

Company, troop, battery, and detachment commanders, by frequent inspections and care throughout the year, will maintain the feet of their men in condition for proper marching. They will cause the proper trimming of nails, removal or paring of corns and callouses, relief of painful bunions, treatment of ingrowing nails and other defects, sending serious cases to the surgeon.

Before a march is undertaken by foot troops, company, troop, battery, and detachment officers will personally inspect the bare feet of their men. While on the march they will personally see each day that their men wash their feet as soon as possible after reaching camp, prick and evacuate blisters, and cover such blisters or excoriations with zinc-oxide plaster supplied by the medical department, applied hot, dust the feet with a foot powder supplied by the medical department, and put on clean socks. Hereafter an undue amount of foot injury and disability from shoes will be regarded as evidence of inefficiency on the part of officers concerned and as causes for investigation.

A place will be provided where officers may have shoes fitted for the purpose of determining or verifying the record. For the purpose of fitting, unit supply officer will draw from the camp quartermaster, on memorandum receipt, a try-on set consisting of a complete series of each size and width of shoes furnished for issue. Shoes of this series will be put in stock and issued before they become unserviceable, and will be replaced by new shoes, keeping the series always complete. Company, troop, battery, and detachment commanders will report in writing to the post or regimental commander every instance of failure to secure proper shoes for their command. Post or regimental commanders will investigate the reasons for and be held responsible as far as lies in their power for the rectification of such deficiencies.

A brief record of the number of such reports from company, troop, battery, and detachment commanders, and the reason for such deficiencies will be furnished to inspectors at each inspection of the post.

Inspections conducted under the provisions of paragraph 889, Army Regulations, will embrace an inquiry into the manner in which this paragraph has been complied with, and the report of inspections will include a statement of all instances of failure on the part of company, troop, battery, and detachment commanders, to secure proper shoes for their commands and the cause of such failure. (*S. R. No. 28, C. No. 3, Sept. 20, 1918.*)

15. *Physical inspections of troops.*—Commanding officers will require a medical officer, accompanied by the company or detachment commander, to make a thorough physical inspection twice in each month of all the enlisted men of each organization belonging to or attached to the command. These inspections will be made at times not known beforehand to the men, and preferably immediately after a formation. The dates on which the physical inspections of the various organizations are made will be noted on the monthly sanitary reports.

At these inspections an examination of the feet and footwear and of the condition of personal cleanliness of the men will be made, as well as careful observation for the detection of venereal diseases.

16. *Sanitary inspections of organizations.*—Surgeons of organizations will make a daily inspection of the commands to which they pertain, giving particular attention to the following: Picket lines; latrines; kitchens and mess halls, including cleanliness of cooks, utensils, and fixtures; barracks and tents; inclosed toilets; baths; lavatories; laundries; exchanges; garbage receptacles; incinerators; and all food supplies. They will make a verbal report at once to their respective commanding officers for the correction of any sanitary defects noted, and a similar report, with the action taken, to the sanitary inspector on his next visit.

17. *Mosquito breeding.*—Areas about camps in which mosquitoes might breed, such as cisterns, tanks, woods, gutters, pools, and drains, will be kept under close observation by the responsible medical officers and the proper remedies applied, i. e., screening, draining, oiling, etc. The use of the mosquito bar is imperative in all districts where mosquitoes are prevalent, except where tents or barracks are effectually screened with wire.

18. *Flies.*—All possible breeding places of flies should be destroyed, particular attention being given to manure and refuse from picket lines and stables. An energetic campaign must be begun at once against the mature flies.

18½. *Lice.*—Numerous reports indicate that lousiness is occurring to a greater or less extent among troops in this country and on transports, and to a much larger extent among our troops overseas. Body lice transmit typhus fever, a disease which has been a serious scourge in some of the European armies. They are believed to transmit "trench fever," which in many commands in France causes a higher admission rate than any disease except the common itch. The same methods of inspection and disinfection which are effective in preventing lousiness will also have a very important effect in detecting and preventing the common itch.

There are three distinct kinds of lice: The head louse, the pubic louse or "crab," and the body louse or "grayback." The latter is the most difficult to prevent and the most important in spreading disease. All kinds of lice are readily visible to the naked eye, as are also their eggs or "nits." All lice by their bites produce itching. Body lice leave small reddish marks on the body when they bite.

The head louse lives on the scalp and the hairs of the head, very rarely elsewhere. The nits are firmly attached to the hairs, particularly at the back of the head. The adult louse is easily killed by applying kerosene to the head, but the eggs are not killed by this treatment. When a man has head lice his hair should be saturated with kerosene and then cut short and the clippings burned. The head should be shampooed several hours later. Search should then be made for nits, and if any remain they should be removed. Softening the nits with hot vinegar favors their removal and destruction. Hair should be kept short at all times and occasional search made for lice. The issue of the necessary amounts of kerosene and vinegar by the Quartermaster Corps is hereby authorized.

Pubic lice or "crabs" live in the hair about the private parts, very rarely elsewhere. The nits are attached to the hairs. The method of getting rid of them is the same as for head lice.

Body lice or "graybacks" should properly be called "clothes lice," as they live and lay their eggs in the clothing and are rarely present on the body except when feeding. The adult lice, as well as the nits, are to be found not only on the underclothing but also in many instances on the outer clothing, particularly in the seams of the garments. The fork of the trousers is a region especially liable to harbor adults and nits. The body louse readily passes from man to man when soldiers are sleeping near each other. The development and spread of body lice is favored when troops are crowded together and have insufficient bathing and laundry facilities. Both body and crab lice are frequently contracted during sexual intercourse with infested prostitutes. They are rarely contracted from latrine seats.

To get rid of the body louse it is necessary to bathe the body most thoroughly and to boil or steam-launder the underclothes. The outer clothing also must be disinfected, either by steam, hot air, or by the careful pressing of the garments, paying special attention to the seams. Immersion in gasoline will destroy the adult louse, but not the nits. Smearing the seams of garments with vaseline is of use when complete disinfection is impracticable. Antilice powders, such as naphthalene, are of some use in limiting the development of lice, but can not take the place of the above measures. The delousing of clothing will be carried out under the supervision of the Medical Department.

At the semimonthly physical inspections special attention will be given to the detection of lice on the body or in the clothing. Upon receipt of orders for oversea service, daily inspections by medical officers will be made of commands under such orders, particular care being taken to detect and eliminate lice. Similar inspections will be made on shipboard.

The ultimate responsibility for the personal cleanliness of the soldier rests with the company or detachment commander. In providing for such cleanliness the prevention of lousiness will be considered one of the most important factors. Enlisted men will be thoroughly and repeatedly instructed in the substance of this regulation. It will especially be impressed upon them that *any persistent itching, burning, or irritation of the head or covered parts of the body is almost certain to be an indication of the presence of lice, common itch, or other disease or parasite*. Such sensations should be an immediate cause for consulting the surgeon. (*S. R. No. 28, C. No. 2, June 17, 1918.*)

Control of Communicable Diseases.

19. *Purpose.*—In carrying out effective sanitary measures in the military service particular attention should be paid to certain of the communicable diseases. The following notes are pub-

lished for the information and guidance of medical officers and others whose duties impose upon them the prevention of disease among the troops of the United States.

20. *Main object of sanitary science.*—The practice of modern sanitary science may be summarized in the statement that its main object is to seek the sources amongst infected persons and animals whose excreta or other constituents or body contents enter the bodies of other persons. Its main postulate is that the routes of infection are simply the routes of infected bodily discharges, which are the routes of ordinary uninfected discharges in ordinary life.

21. *Environment.*—The influence of environment depends upon whether or not it permits of or necessitates the exchange of human discharges. Overcrowding, if combined with lack of discipline and order, and lack of facilities for washing, especially of the hands, contributes to the spread of infection, not of itself, but only if infection be introduced into the community. Overcrowding, if there is discipline and intelligence, with proper precautions to avoid the exchange of excreta, does not spread infection even if it be introduced.

22. *Principal routes of infection.*—Water, food, flies, and milk are the main public routes of gastrointestinal infection from individuals to group, and from group to group. Contact is the great private route from individual to individual. Contact infection radiates directly from the infected person through nose, mouth, bladder, and bowel discharges. The great route of exchange is by smears on the hands, although mouth spray and sputum also act in many diseases. If we classify the chief communicable diseases of the Temperate Zone by their principal routes of infection, we plainly see that of all the routes contact alone is common to all diseases.

23. *Program.*—A program of military sanitation should aim:

(*a*) To secure to each individual continuously the highest possible health.

(*b*) To secure to each instruction and training in personal conduct in order to avoid receiving into his body the discharge of infected persons.

(*c*) To secure to each specific immunization.

These three measures place the abolition of infection directly upon the individual. The three following place the abolition of infection upon experts who deal directly with the infection itself:

(*a*) The supervision of the four great public routes of infection, to exclude all bodily discharges from them.

(*b*) The supervision of all known infectious cases, to exclude their discharges from all routes.

(*c*) The sociological supervision of all infected persons.

24. *Typhoid fever.—Cause.*—The bacterial cause of typhoid fever is a rod-shaped microorganism or germ called the typhoid bacillus.

Nature.—Typhoid fever is chiefly a filth disease, and is widely distributed over the world. The typhoid bacillus is present in the feces and urine of all persons who are ill with the disease, and of certain persons who have long recovered from it. The latter persons are referred to as carriers of the bacilli, or typhoid carriers.

Means of communication.—Lack of care in the disposal of the excreta and want of personal cleanliness are the chief sources of the disease. A faulty method of disposing of feces and urine may lead to contamination of drinking water, milk, or other food directly or through the agency of flies.

Human excrement should be properly disposed of, breeding places of flies destroyed, food supplies protected, and persistent warfare against the fly unceasingly carried on.

Sources of the disease in military camps.—The commonest mode of infection in military establishments is through personal contact, especially by means of the hands, with individuals who harbor the typhoid bacillus. Sometimes this contact is direct, sometimes indirect. About 60 per cent of the cases are believed to arise in this manner.

The direct instances are those in which infection follows upon personal association with an infected person or carrier. The indirect ones are such as arise from clothing, bedding, water, milk, or other foods, and the dishes or drinking cup of an infected person.

The carrier is, therefore, because unsuspected and more insidious, a greater source of danger than the sick person. The medical officer should be on the alert to suspect and detect him. Once detected, he requires particular care in respect to isolation and treatment. The carriers who handle or prepare food are especially dangerous. In order to avoid increase in carriers, no patient convalescent from typhoid fever should be released until three successive examinations of the stools and urine, collected at six-day intervals, have shown him to be free from typhoid bacilli.

Personal precautions to be observed.—From what has been stated it is obvious that habits of personal cleanliness are to be encouraged in every way. Bathing should be frequent, the washing of the hands before eating and after visiting the latrine should be obligatory, and due attention paid to the laundering of underclothing. The eating and other utensils used by persons sick of typhoid fever and carriers of the typhoid bacilli should be promptly sterilized.

25. *Paratyphoid fever.—Causes.*—Like typhoid fever, paratyphoid fever is produced by bacteria. Two bacilli, known as paratyphoid A and B, are its bacterial causes.

Nature.—Paratyphoid fever, like typhoid fever, is a filth disease, and as such is to be dealt with precisely as is typhoid fever. In addition, the paratyphoid bacilli B occur in animals and may be present in their flesh. Hence, such infected foods, when improperly cooked or preserved, may give rise to paratyphoid fever. This form of the disease constitutes one of the kinds of food or meat poisoning. Healthy carriers of the paratyphoid bacillus also exist.

Vaccination.—Typhoid vaccination does not protect against paratyphoid infection. It is, therefore, necessary to vaccinate against paratyphoid, as well as against typhoid fever. For this purpose a vaccine is supplied containing both the A and B bacilli. It is injected in the same manner as the typhoid bacillus vaccine.

Distinction between typhoid and paratyphoid fever.—These two kinds of fever are often indistinguishable clinically. But laboratory test methods serve to distinguish them from each other. Every case of undetermined fever and every case of clinical typhoid or paratyphoid fever should have a blood culture made not later than the fifth day, this culture to be examined at an Army laboratory, unless specific authority to do otherwise is given by the Surgeon General's office. A subculture from any positive blood culture will be sent to the nearest department laboratory for confirmation and record.

Typhoid and paratyphoid vaccination.—All persons entering the military service will be vaccinated against typhoid and paratyphoid fevers, under the direction of the medical officer, as soon as practicable after entrance. Exception may be made in the case of persons over 45 years of age, and when the occurrence of a previous attack of typhoid fever or a complete course of vaccination within three years is established to the satisfaction of the responsible medical officer.

Officers under 45 years of age will be vaccinated after three years and enlisted men on reenlistment.

Vaccination will consist of a series of three injections given exactly as in the first series.

Recruits will be vaccinated at places of enlistment, unless, because of special assignment or other reason, the men are not to remain at the station long enough to allow the completion of the course, in which event the vaccination will be completed immediately after they join the organizations or stations to which they are assigned. On page 2 of the service record of every recruit or enlisted man will be entered the dates of completion of vaccination against typhoid and paratyphoid fevers. The absence of any date in the line provided for that purpose will indicate that the vaccination has not been administered. Company and detachment commanders will examine the service records, and, if the vaccination has not been completed, will see that the vaccination is begun immediately after the men join the organizations or stations to which assigned.

Civilian employees who are subject to field service of any kind, including those on transports and in the mine-planter service, will be vaccinated as soon as employed.

The vaccination of all officers of the Officers' Reserve Corps, inactive list, against typhoid-paratyphoid fevers, in accordance with existing regulations, is authorized. (*S. R. No. 28, C. No. 5, Nov. 24, 1919.*)

Records will be kept of all officers, soldiers, and civilians in the military service who receive the antityphoid and antiparatyphoid vaccinations, giving the dates of vaccination.

The following directions for vaccination against typhoid and paratyphoid fevers are published here for the information of medical officers:

The first dose is one-half cc. (7½ m.); the second and third are each 1 cc. (15 m.). An interval of at least seven days should elapse between doses. This interval may be extended to the fourteenth day in case of necessity.

The site of inoculation is the arm, at the insertion of the deltoid muscle. If for any reason this site can not be used, the needle may be introduced into the back, over the lower portion of the scapula, or in the chest below the clavicle. The dose is to be given subcutaneously and not into the muscles nor into the skin. The arm should be cleansed as for any other operation. Tincture of iodine painted over the dry skin, before and after the injection, has proven satisfactory.

The ampule should be washed off in an antiseptic solution and opened after making one or more cuts near the top with a file. The vaccine can be drawn out of the container with a syringe, or it may be emptied into a shallow glass dish, such as a salt cellar, which has been sterilized by boiling.

The syringe and needle should be sterilized by boiling in 2 per cent soda solution. To insure perfect sterilization, draw the piston out to its full length, or remove it entirely so that the barrel is full of water during the boiling. A fresh needle should be used for each man, or if one needle must be used on two or more men, it should be resterilized before each injection.

No person should be vaccinated who is not perfectly healthy and free from fever. The temperature should be taken in doubtful cases, and the urine should be examined; if fever or any other symptoms of illness are present the procedure should be postponed. These precautions are necessary to avoid vaccinating men who may be in the incubation stage of typhoid or other fever. Neither beer nor alcohol in any other form should be drunk on the day of treatment. Vaccination is well borne by children and by women, using doses proportionate to the body weight, taking 150 pounds as the unit. Women should not be given the first dose during or near the time of the menstrual period.

The most suitable time for the administration is about 4 o'clock in the afternoon, as the greater part of the reaction is then over before morning. There is usually some headache and malaise, and a local reaction consisting of a red and tender area about the size of the palm of hand, and sometimes tenderness in the axillary glands. It is best not to require any duty for 24 hours, nor to permit active exercise, such as long rides or walks. Rarely, marked general reactions occur—headache, backache, nausea, vomiting, herpes labialis, occasionally albuminuria, and some loss of body weight. The number of such reactions is exceedingly small, and regardless of their severity they as a rule disappear inside of 48 hours.

The Widal reaction is positive after typhoid vaccinations, appearing in about 10 days after the first dose, and it remains positive for six months to a year. This fact must be considered in diagnosing typhoid in vaccinated persons. They may give a positive Widal regardless of the nature of the illness, and the reaction is frequently of no assistance in diagnosis.

The vaccines should be stored in an ice box. They will keep for four months, and perhaps longer when stored at low temperatures in the dark. A fresh ampule should be opened for each day's use. Any vaccine remaining unused in an open ampule at the end of the day should be thrown away. The only vaccines used will be those obtained from the Army Medical School, and will be furnished on request by letter or by telegram to the department surgeon. When for any reason a larger stock is on hand than appears to be needed, directions as to disposition will be obtained from the commandant, Army Medical School, upon application to him directly, stating date of receipt of the vaccine. Stock over 4 months old will be destroyed when a new supply has been received.

26. *Cholera.—Cause.*—The bacterial cause of cholera is a comma-shaped bacillus known as the comma or cholera bacillus.

Nature.—Two main forms of cholera are distinguished. In one type of the disease large epidemics break out more or less suddenly. In these cases the cholera bacillus is contained in the drinking water. In the other form of the disease the cases occur separately and occasionally; they arise from contact with other cases of cholera, with cholera bacillus carriers, or from filth contamination by flies, as in the matter of spread of typhoid fever.

The cholera bacillus breeds in the intestine of man and escapes with the intestinal discharges. Gaining access to water supplies, it survives there for a time. Upon the hands, clothing, etc., it may be carried to healthy persons by contact. In the cholera patient only the intestinal discharges contain the bacilli.

Prevention.—The control of the drinking water is imperative to avoid water-borne epidemics. The cleansing of the hands, disinfection of clothing, bedding, eating utensils, etc., are necessary to prevent contact infection. The discovery and isolation of carriers, who in infected localities may constitute from 5 to 10 per cent of the population, should be assiduously attended to. Carriers are an especial menace when they are engaged in the handling and preparation of food. Should cholera appear, the things to be especially kept in mind are:

(1) Close watch over the persons who have to do with the handling of food.
(2) The safeguarding of water and milk. The latter should always be boiled before use.
(3) The use only of food recently cooked.
(4) The screening of kitchen and mess halls.
(5) The reduction of flies by trapping and killing, and the destruction of their breeding places.

27. *Dysentery.—Causes and nature.*—Dysentery, or inflammation of the large intestine, is caused by two classes of microorganisms, an amœba and certain bacteria. The former gives rise to amœbic, the latter to bacillary, dysentery. The bacterial or bacillary form of dysentery is more widely distributed over the world than the amœbic. While the former is found in all climates, the latter is chiefly restricted to warm countries. But persons suffering from amœbic dysentery may carry the disease from a warm to a cold climate.

Sources of infection.—The amœbæ and bacilli which cause dysentery are contained in the intestinal contents and are discharged with them. They are, therefore, subject to the same manner of distribution as are the typhoid bacilli, and the preventive measures to be employed are identical with those employed in typhoid fever. It may be well, however, to emphasize the common occurrence of carriers of dysentery bacilli and amœbæ among exposed and recovered cases, and the necessity of enforcing habits of personal cleanliness and other related measures to control the disease.

Diarrhea, etc.—In addition to dysentery, slighter and nondysenteric forms of intestinal trouble are more or less common. As the results of chill and indiscretion in diet, diarrhea, griping, and even bloody stools may arise. But any case of persistent diarrhea in which blood and mucus are being discharged should be regarded as suspicious and submitted to a laboratory examination in order to determine whether it may be dysentery. The amœbæ are searched for by direct microscopical examination; the bacilli may be obtained in culture or an agglutination test made with the patient's blood to determine their presence.

28. *The intestinal group of diseases.*—(*a*) Typhoid and paratyphoid fever, cholera, and amœbic and bacillary dysentery form a group of intestinal infections in which the causative microorganisms are discharged with the excreta, and gain access to healthy persons through the mouth. The general principles of their prevention are practically identical. The first effort made should be to destroy the infectious agents at the source, namely, in the discharges from the intestine. The next effort should be to control the water and food supply and the personal habits of the men, so that any of the microorganisms which escape destruction may not find their way into the digestive tract in a living condition.

(*b*) No man should be employed as cook or handler of food or water who is a carrier of B. typhosus, B. paratyphosus, or B or cysts of Entamœba histolytica.

(*c*) Stools of all cooks and food handlers (including handlers of water and drivers of water and ice wagons) will be examined for typhoid, paratyphoid A and B, and dysentery bacilli, and for cysts of Entamœba histolytica. In case of enlisted men, notation of positive findings should be made on the service record.

29. *Epidemic meningitis.—Names.*—Epidemic meningitis, cerebrospinal meningitis, and cerebrospinal fever are different names for one and the same disease. In certain epidemics, hemorrhages into the skin are common; because of this fact the disease is also called spotted fever.

Cause.—The bacterial cause of epidemic meningitis is a diplococcus called "meningococcus." It is present in the inflamed membranes of meninges about the brain and spinal cord and within the ventricles of the brain of those ill of the disease. It is also present upon the mucous membranes of the nose and throat of the ill, and even of the well, who act as healthy carriers of the diplococcus.

Sporadic cases.—Epidemic meningitis has not been absent from this country as a whole in many years. The severe epidemics have practically disappeared, but occasional or sporadic cases have, nevertheless, continued to arise. From time to time groups of cases or small local epidemics have also appeared.

Carriers.—The healthy carriers of the meningococcus are more numerous than the cases of the disease which arise. The persistence of the sporadic cases indicates, therefore, the continued existence of such carriers in the general population. The assembling of large groups of men from various parts of the country is certain to introduce carriers, and the close association of the carrier with other persons is as certain to lead to the appearance of cases of epidemic meningitis.

Mode of infection.—Infection with the meningococcus takes place by way of the mucous membrane of the nose and throat. Even when meningitis does not arise, the carriers harbor the diplococcus upon those mucous membranes. They are present also in their secretions, and gain access to others through coughing, sneezing, hawking, and spitting, and through contact of the hands contaminated with the secretions.

Sources of danger.—The ill patient is a source of danger only to his attendants, because he is kept isolated in bed. To reduce this danger to a minimum, every precaution should be taken to disinfect or destroy the discharges from the nose and throat. This is necessary primarily in the interest of the attendants—doctors and nurses—and secondly in the interest of others, since doctor or nurse may be converted into a carrier.

The chief danger to others is the healthy carrier, because he is not suspected or isolated, and moves about freely. He can be detected by means of a bacteriological examination, and, having been detected, methods exist for ridding the mucous membranes of the diplococcus.

The occurrence of a case of epidemic meningitis in a barrack, tent, or mess is the signal for the bacteriological examination of all the men in this group. Until this is done, the men should not be permitted to move about freely. All those not found to be carriers can be at once released. The others are released as soon as they become meningococcus free. Likewise the convalescent patient is not released until a bacteriological examination has shown the mucous membranes of the nose and throat to be free of the meningococcus.

Varieties of cases.—Two main clinical varieties of epidemic meningitis occur. They are called ordinary and fulminating or explosive. In the former the symptoms come on and develop gradually, and death or recovery is a matter of one or several weeks. In the latter the symptoms appear suddenly and quickly become alarming, and death may result in a few hours, and usually does occur within 36 hours. The greatest number of recoveries occur among the ordinary cases, but recovery has been observed even among the fulminant ones. Recovery from both is now more frequent as the result of the use of the antimeningococcic serum.

Prevention.—No certain means of prevention of epidemic meningitis is known, except the detection and removal of carriers of the meningococcus and the isolation of cases of the disease. The incidence of the disease is, however, influenced by hygienic conditions. The greatest number of cases tends to occur in the winter when people are much indoors and ventilation is deficient. In the spring, summer, and autumn, when they live less within doors, fewer cases arise. Hence the appearance of the disease in camps is an indication for better separation of the inmates. The less they are in intimate contact the smaller the danger from coughing, sneezing, etc. Moreover, every effort should be made to prevent sneezing, coughing, hawking, and spitting, except under conditions in which the secretions can be caught, as in a handkerchief. Cleanliness of person, especially of the hands, is also a safeguard.

Treatment.—The treatment most relied upon consists in the injection into the membrane of the spinal cord and brain of the antimeningococcic serum. This is done by means of lumbar puncture, a certain quantity of the cerebrospinal fluid first being removed. This fluid, which normally is perfectly clear, becomes turbid or purulent as a result of the infection, and contains the meningococcus and leukocytes and other cells. The diplococci are partly within and partly without the leukocytes. Removal of the cerebrospinal fluid is of benefit because it withdraws a certain number of meningococci, but it also reduces the pressure within the ventricles of the brain, which is of value. The antimeningococcic serum acts directly upon the diplococci, destroys them, or prevents their multiplication. Hence it is definitely curative.

The serum acts only as long as it is within the meninges or membranes of the spinal cord and brain, and as it escapes into the blood its injection must be repeated. The rule is to repeat the injection every 24 hours for two or three or more days. In severe cases it has been found of advantage to repeat the injection every 12 hours. The detailed methods of employing the serum and of treating carriers are given in a special circular.

30. *Malaria.—Cause.*—Malaria is caused by a microorganism (plasmodium malariæ) which gains access to the body through the bites of mosquitoes belonging to the genus Anopheles.

The predisposing causes of the disease are those that favor the development of mosquito life.

On account of the nocturnal habits of the malaria-bearing mosquitoes, the disease is more likely to be contracted at night.

Prevention.—Camps should not be located near swamps or in places where standing water favors the development of the mosquito. Every precaution will be taken to destroy breeding places by draining and filling, or by oiling them, and by the cutting away of all grass or undergrowth for a distance of 200 yards about camps and habitations in order that the adult mosquitoes may not find lodgment and protection.

In certain conditions, the use of preventive doses of quinine may be required, and administered by order under the supervision of the medical officer. All cases of malaria will be promptly isolated for treatment and protected from the attack of mosquitoes.

See also paragraphs 195–197, Manual for the Medical Department.

31. *Yellow fever* is transmitted by the bite of the yellow-fever mosquito (Stegomyia calopus).

Yellow fever is essentially a disease of the Tropics, and its existence is dependent upon the distribution of this single species of mosquito, small and silver striped, active principally at evening time, and breeding generally in small accumulations of water close to the habitations of man.

The prevention of this disease, as of malaria, depends chiefly on the destruction of the mosquito and its breeding places, the proper protection against the bites of the insects at all times, and the early isolation, protection, and treatment of each case of yellow fever as soon as suspected.

32. *Typhus fever.—Definition.*—Typhus fever is an acute infectious disease caused by a specific germ, characterized by sudden onset, high fever, marked nervous symptoms, and macular eruption. It has prevailed in Mexico and in eastern Europe since the middle of the sixteenth century.

Transmission.—Typhus fever is transmitted to man only by the bite of the louse, which infests the clothing and body of the victims.

Prevention.—The prevention of typhus fever depends, therefore, upon personal cleanliness and the avoidance and destruction of infected lice.

Frequent bathing and cleansing of clothing, with repeated inspection of garments, particularly the seams where the eggs of the louse are deposited, are imperative precautions.

The clothes louse lays its eggs among and attached to the fibers of clothes, with a special preference for seams and linings, a point to be remembered in the destruction of lice.

The eggs are the size of a pin point, yellowish white in color, goblet-shaped, and attached at the lower end of the cloth by a cement excreted by the female. They can be destroyed by boiling water or kerosene. In this connection see Bulletin No. 10, War Department, 1916.

The avoidance of buildings, places, and persons known to be infected with lice is of first importance.

In case troops are sent into a typhus area, a railway disinfecting and bathing train will be provided, and stationary plants of like character at the bases.

33. *Epidemic jaundice.—Cause.*—Epidemic jaundice is caused by a spirochete, which is abundant in the urine and feces of convalescents, and is also frequently found in the kidneys of rats. This spirochete lives for some time in water, and the disease is contracted by standing in contaminated water, and less frequently by eating contaminated food.

Prevention.—Prevention consists in isolation of all cases until the urine is free from spirochetes, avoidance of urine and fecal contamination of trenches, destruction of rats, the protection of food, and keeping trenches free from water. If the trenches become contaminated water should be pumped out and lime sprinkled freely over the soil.

34. *Smallpox.*—Any case of smallpox occuring among persons subject to military control will be isolated, and contacts not protected by recent successful vaccination will be revaccinated.

35. *Vaccination.*—Vaccination being recognized as an effective means of preventing smallpox, all recruits upon enlistment and all soldiers upon reenlistment will be vaccinated. When the first vaccination of a recruit is ineffective, it will be repeated at the end of eight days.

All the personnel of a military command, station, or transport, including civilians connected therewith, will be vaccinated when in the opinion of the medical officer responsible for sanitation it is necessary as a means of protection against smallpox. Civilians refusing to be vaccinated when so directed by proper authority may be excluded from the military reservation or station.

Officers should be vaccinated at least once in a period of seven years. Troops under orders to perform oversea journeys or field service will be inspected by the responsible medical officer with respect to their protection against smallpox, and those who in his opinion require it will be vaccinated.

Technique.—The skin at the selected site must be clean. Washing with warm water, followed by alcohol, is usually sufficient, the alcohol being permitted to evaporate before proceeding. Scrubbing with soap and water is necessary for a dirty skin, but needless irritation of the skin is to be avoided.

The procedure, described as follows, is preferable to "scarification," which will no longer be used:

Incision is the method of choice, and should be made with the point of a sterile needle, producing a "scratch." A sterile scalpel may be used, but is more likely to cause bleeding. The incision or scratch should preferably not draw blood. There should be at least two incisions, three-quarters of an inch long and 1 inch apart; after exposure to smallpox four incisions will be made. The virus is then placed upon the abraded surface and gently rubbed in, unnecessary iritation being avoided.

The wound is allowed to dry thoroughly and can be left without dressing, though several layers of gauze may be applied with adhesive plaster. Any dressing that retains heat and moisture is bad. Shields will no longer be issued.

Bathing is permitted, but unnecessary use of the limb is to be discouraged when practicable.

36. *Measles, mumps, and scarlet fever.*—When these diseases appear in a command all cases of illness with catarrhal symptoms having a temperature of 101° or over will be promptly isolated, and the general preventive measures used against the contagious respiratory diseases will be instituted. Susceptible contacts will be isolated and inspected daily.

If practicable, a detention camp will be established where all recently joined recruits will be held under observation before being permitted to join their organizations.

37. *Venereal diseases.*—See paragraph 13.

SPECIAL REGULATIONS NO. 49a.

Course of Instruction for Medical Officers of the National Guard and Officers' Reserve Corps.

1. A course of instruction will be given medical officers of the National Guard and Officers' Rsserve Corps at the medical officers' training camps established at Fort Benjamin Harrison, Ind., Fort Riley, Kans., Leon Springs, Tex., and Fort Oglethorpe, Ga., beginning June 1, 1917, and continuing with successive classes as long as may be necessary.

2. The proposed training is intended to reach all the untrained medical officers now in, or hereafter to enter, the service, and give them reasonable insight into their new functions, and into those of their subordinates, with the least possible delay. The officers so trained must be able not only to perform their own duties efficiently without supervision of more experienced officers, but also to act as efficient instructors of their own subordinates, both commissioned and enlisted.

3. The instruction to be given will be intensive and divided into three periods of four weeks each. There will be approximately 180 hours of instruction in each period and 540 hours for the total course.

4. The first period is intended primarily to orient the new medical officer to the military environment, and to familiarize him with the duties of his enlisted subordinates whom he must shortly train. Its scope and distribution is indicated as follows:

	Hours.
Setting up (15 minutes daily, for 26 days)	6. 5
Drills (marching, litter, ambulance, other means of transport, etc.)	52
Inspections	4
Equitation, bridling, saddling, care of animals, etc	33
Tent pitching, shelter tent	2
Tent pitching, pyramidal tent	2
Personal equipment of the sanitary soldier	1
Field and surplus kits	1
Care and maintenance of soldier's equipment	2
First aid, using soldier's equipment only	2
Examination of recruits, with papers and finger prints	8
Nature and employment of regimental medical supplies	8
Customs of the service	2
Duties of the soldier	4
Relation of the Medical Department to rest of Army	1
General organization of the Medical Department for war	4
Army Regulations	6
General organization of the military forces of the United States	2
Manual for the Medical Department	12
Military hygiene and sanitation	6
Field Service Regulations	6
Paper work, relating to the Medical Department	4
Map reading, use of compass, orientation, etc	6
	180. 5

5. The second period of training especially takes up the functions of the medical officer as such. Its scope and distribution is indicated as follows:

	Hours.
Setting up (15 minutes daily for 26 days)	6. 5
Drills, marching	26
Inspections	4
Equitation, and care of animals, etc	33
Tent pitching, hospital tentage	4
Elementary position and road sketching	4
The regimental detachment; its use and internal administration	8
The ambulance company; its equipment, use, and internal administration	8
The field hospital; its equipment, use, and internal administration	8
The tactical use of Infantry (lecture by line officer)	1
The tactical use of Cavalry (lecture by line officer)	1
The tactical use of Field Artillery (lecture by line officer)	1
The use of the Engineer and Signal Corps (lecture by officer of proper corps)	1
The service and mechanism of supply in the field (lecture by quartermaster)	1
Paper work, relating to the Medical Department (continued)	12
Paper work, relating to the Quartermaster's Department	4
Paper work, relating to the Ordnance Department	2
The Medical Department in campaign	8
The principles of sanitary tactics	8
Map problems	4
War games	8
Military hygiene and sanitation (continued)	12
Army Regulations (continued)	6
Manual for the Medical Department (continued)	6
Lectures on special subjects	4
	180. 5

6. The third period of training continues the training of the medical officer in his functions as such. In this period he will, as far as possible, put into actual practice what has been learned in theory. To this end, sanitary units and detachments will be utilized in the solution of large field problems, apparatus demonstrated, and sanitary utilities procured, constructed, and operated.

The scope and distribution of this training is indicated as follows:

	Hours.
Setting up (15 minutes daily for 26 days)	6. 5
Drills (service as drillmaster in drills of diverse nature)	26
Inspections	4
Equitation	15
Handling of ration and mess management	2
Manual for Court-martial and Military Law	8
The Articles of War	1
The Geneva and Hague Conventions	1
The rules of land warfare	1
Military surgery	8
Liquid fire; poison gases, protection against, symptoms and treatment (demonstrations)	2
War psychoses and neuroses; shell shock; malingering	3
Trench warfare; "trench foot"	1
Demonstration of trench system, including bomb proofs, dugouts, entanglements, abattis, etc	1
Cantonment hospitals, organization and management of	2
The sanitary service, line of communications	1
Hospital ships; ships for patients; hospital trains; trains for patients	2
Base hospitals, their organization and management	1
General hospitals, their organization and management	1
Contagious disease hospitals; casual camps; convalescent camps; camps for prisoners of war	1
Organization, functions, and limitations of the American Red Cross	1
The civil sanitary function of the Army Medical Department in occupied territory	1
War games	2

	Hours.
Tactical rides	6
Sanitary inspections, practical demonstrations of methods of	4
Practice march and bivouac (2 days)	15
Practical field maneuvers, including brigade and divisional problems, with two night problems, and utilizing regimental detachments, ambulance companies, field hospitals, stations for slightly wounded, etc., in coordination. Problems will include the attack, retreat, planned defense, and reencounter, using all arms	60
Lectures on special subjects	4
	180.5

7. The commandants of the several medical officers' training camps will prepare the schedules necessary to carry out the foregoing plan of instruction.

SPECIAL REGULATIONS NO. 61, 1917.

Regulations Governing the Employment of the American Red Cross in Time of War.

The American National Red Cross having been authorized by the act of Congress approved April 24, 1912, to render aid to the land and naval forces in time of actual or threatened war, the following regulations governing the status, organization, and operations of this society when employed with the land forces having received the approval of the President, are published for the information and guidance of all concerned:

1. The organized Red Cross units serving with the land forces will constitute a part of the sanitary service of the land forces.

2. When the War Department desires the use of the services of the Red Cross in time of war, or when war is imminent, the Secretary of War will communicate with the chairman of the central committee of the society, specifying the character of the service required, the kind and number of Red Cross units desired, and designating the place or places where the personnel and matériel will be assembled.

3. When any member of the Red Cross reports for duty with the land forces of the United States, pursuant to a proper call, he will thereafter be subject to military laws and regulations as provided in article 10 of the International Red Cross Convention of 1906, and will be provided with the necessary brassard and certificate of identity.

4. Except in cases of great emergency, Red Cross personnel serving with the land forces will not be assigned to duty at the front, but will be employed in hospitals in the home country, at the base of operations, on hospital ships, and along lines of communications of the military forces of the United States.

5. Before military patients are received in a Red Cross hospital specific authority must in the first instance be received from the Secretary of War, and the director must be a commissioned officer of the Medical Corps or, in special cases, an officer of the medical section of the Officers' Reserve Corps designated by him to command it. Such officer will be held responsible for the management, discipline, and records of the institution; he will regulate admissions and discharges and see that the interests of both the Government and the patients are conserved. Under specific authority, however, military patients may be sent to Red Cross general hospitals not commanded by a commissioned medical officer under such conditions as to allowances, reports, and the control of military patients as the Secretary of War may prescribe.

6. No units, sections, detachments, or individuals of the American Red Cross will be accepted for service by the War Department unless previously inspected by a medical officer of the Army and found qualified for the service expected of them.

7. The American Red Cross may, when war occurs or is imminent, be called upon by the War Department to assist the sanitary service by furnishing organized units, sections, detachments, or individuals whose services may be necessary, such as physicians, surgeons, dentists, chaplains, laboratory experts and their assistants, pharmacists, nurses, stenographers and clerks, hospital personnel, sick transport personnel.

8. Persons enrolled by the American Red Cross in its units or as individuals who are accepted for the sanitary service under paragraph 7, and become a part of it under paragraph 1, shall be paid by the National Government according to the nature of their services whenever authority of law exists for such payment either on military rolls or as civilian employees.

Red Cross volunteers are persons who give their services without pay, and such volunteers serving with Red Cross organizations or as individuals under Red Cross commissions, warrants, or letters of appointment shall, during the period of such service with the sanitary department of the Army, be given the respect due to their positions and services and shall be furnished such appropriate quarters, beds, food, and transportation as may be necessary for the discharge of their duties. They shall be entitled to wear a distinctive badge approved by the Secretary of War and issued by the American Red Cross.

All units, sections, detachments, or individuals of the American Red Cross, upon being accepted for duty by the Secretary of War in time of war or when war is imminent, shall from the date of such acceptance be subject to the orders of the proper military authorities, and such Red Cross personnel when serving with the armies of the United States in the field, both within and without the territorial jurisdiction of the United States, are subject to the Articles of War.

9. To facilitate the enrollment and training of Red Cross personnel it shall be divided into three classes:

Class A. Those willing to serve wherever needed.
Class B. Those willing to serve in home country only.
Class C. Those willing to serve at place of residence only.

Only persons belonging to class A shall be enrolled in Red Cross organizations intended for service at military bases or along the line of communications. Individuals whose services may be needed in the zone of the line of communications and base may be also enrolled in class A.

Class B will be enrolled for service in hospitals and other sanitary institutions that may be established in the home country. They may be organized into such units and receive such training as may be deemed advisable.

Class C will be composed of individuals of local Red Cross societies, who, on account of their occupation or experience in the care of sick and other hospital duties, may be expected to render efficient service in military institutions established in their locality.

10. The Red Cross units organized for service with the Army or for the purpose of training personnel therefor are:

1. Ambulance companies.
2. Base hospitals.
3. Hospital units.
4. Surgical sections.
5. Emergency nurse detachments.
6. Sanitary training detachments.
7. Information sections.
8. Refreshment units and detachments.
9. Supply depots.
10. General hospitals.
11. Convalescent homes.

11. Ambulance companies will supplement and assist the organizations of the Regular Army engaged in the transportation of the sick and wounded from the zone of the advance to base hospitals and from the base to general hospitals.

The personnel may be used to man ambulance trains, hospital trains, hospital ships, and other agencies for sick transport by land and water, or for the establishment of emergency hospitals.

The organization will be as follows:

1 captain,
4 lieutenants,
1 first sergeant,
11 sergeants,
5 mechanics,
2 cooks,
2 assistant cooks,
20 chauffeurs,
2 musicians,
43 privates,

and such other personnel as may be approved by the Secretary of War.

The training of ambulance companies should include instruction in first aid, elementary hygiene, and the drill of sanitary troops. The personnel of such companies should be made practically familiar with the use of the various appliances (including improvisations) for transporting sick and wounded, such as litters, ambulances, and other vehicles, with the fitting up of trains and ships for patients, and with other similar duties. Instruction should also be given in the organization and conduct of rest stations. Some personnel of each company should also be made proficient in methods of disinfection.

12. Base hospitals are enrolled by the Red Cross for service at a military base. Their organization will correspond approximately to that of an Army base hospital as prescribed in the Tables of Organization, except that the male administrative personnel may be in time of peace one-third of the enlisted strength of that of an Army base hospital, and such additional specialists and volunteers may be enrolled as the Secretary of War may approve. When called into the service of the United States, Red Cross base hospitals will be furnished by the Quartermaster Corps of the Army with transportation, and subsistence for all except commissioned officers, for the personnel and equipment to the designated station and with such buildings or tentage or both as may be needed for the care of the patients and the administration of the hospital. The Quartermaster Corps will provide suitable quarters, beds, and subsistence for the personnel, including duly enrolled Red Cross volunteers.

The medical equipment when not furnished by the War Department will conform as closely as possible to the standard Medical Department equipment, and will be stored when practicable by the War Department at a point as convenient as may be advisable to the parent hospital of the unit.

The organization of a base hospital will be:

A director, who will be assisted by the following staff: An adjutant, a quartermaster, who are staff officers, and a registrar who may be an officer, noncommissioned officer, or specially qualified civilian, and such subordinate administrative personnel as may be necessary.

When mustered into the United States service the director shall act as assistant to the commanding officer of the hospital, when one is designated under section 5, and in addition to his duty as assistant he shall be chief of the surgical, medical, or laboratory service of the hospital.

A surgical section, which will include a chief of the surgical service and eight staff surgeons, including an orthopedist and one or more specialists in the treatment of diseases of the eye, ear, nose, and throat.

A medical section, which will include a chief of the medical service and five staff physicians, including a specialist on nervous and mental diseases.

A laboratory section, which will include a chief and two assistants who will have competent knowledge of pathology, bacteriology, serology, and roentgenology.

Two dentists, skilled in oral surgery.

In cases where the American Red Cross organize a reserve for a base unit the relief of officers of the professional staff of such unit by officers of the reserve may be authorized, when the interests of the service permit.

Fifty nurses, members of the Red Cross nursing service, one of whom shall be chief nurse and one of whom may be a dietitian.

Twenty-five volunteer nurses' aids.

One hundred and fifty male administrative personnel, who may be members of the Enlisted Reserve Corps or may agree to enlist in the sanitary service when called into active service. This personnel will have the proper quota of noncommissioned officers, as prescribed by the Tables of Organization for base hospitals.

Fifteen employees.

Such Red Cross volunteers as may be authorized by the Director General of Military Relief, upon the approval of the Secretary of War.

13. Hospital units are intended to supplement and assist established military hospitals. Sections of hospital units may also be assigned to duty on hospital trains and ships and to other military sanitary organizations.

Hospital units are organized as follows:

1 director,
1 adjutant,
2 chiefs of service,
4 staff surgeons,
4 staff physicians,
1 head nurse,
20 nurses,
3 clerks, who may be women,

and such number of orderlies as may be necessary.

14. Surgical sections are special detachments intended to reenforce the operating staffs of hospitals in times of emergency. They consist of:

1 director.
3 surgeons.
1 head nurse.
6 nurses.
2 orderlies.
1 recorder, who should be a stenographer, and may be a woman.

The recorder should prepare the reports and records of cases and conduct the official correspondence of the section with such other clerical work as may be required by the commanding officer of the unit to which the section may be attached. The individual members of these units shall be kept intact and not be detached from them for other duty except by order of the commanding general of an Army corps or separate division.

15. Emergency detachments of nurses are organized to meet sudden calls from the sanitary service of the Army, or other emergencies. They will be used to supplement the nursing service of military hospitals already established, or be assigned to duty on hospital ships, hospital trains, or any other service where groups of nurses are needed. Each detachment consists of 10 nurses, one of whom is designated as head nurse and acts as such until the group is assigned to duty under the supervision of an Army chief nurse, when her duties will be the same as those of the other members of the detachment.

16. Sanitary-training detachments are organized primarily for the purpose of instructing men so that they may perform efficiently the duties pertaining to the enlisted medical service of the front and line of communications with the Regular Army or with Red Cross units in time of war. When so trained these detachments may be used by the Red Cross in times of national disaster. Sanitary-training detachments will be organized as follows:

1 commandant.
1 assistant commandant.
1 quartermaster.
1 pharmacist.
5 section chiefs.
4 mechanics.
4 carpenters.
2 cooks.
2 clerks.
40 privates.

The section chiefs will have the title and rating of sergeants, and one of them, selected by the commandant, will act as first sergeant. The commandant and assistant commandant will be physicians in good standing.

17. Information sections are composed of a section chief and such clerical assistants as may be necessary. They may be attached to base hospitals, general hospitals, or to the office of the senior medical officer of prisoners' camps, or other military establishments where their services may be necessary. They will conduct, under the supervision of the commanding officer of the organization to which attached, the correspondence of the patients or prisoners, report the addresses, physical condition, and such other information as may be authorized to the Red Cross information bureau at Washington, and conduct the correspondence with that bureau.

18. Refreshment units and detachments: A refreshment unit is an enrolled organization equipped to furnish refreshment to the sick and wounded and to troops at halting places and places of transshipment. Its organization and equipment is such as may be prescribed by the American Red Cross. Refreshment detachments are temporary organizations for the same purpose.

19. Supply depots are depots for the care, preservation, and issue of Red Cross property. When located on Government reservations they shall be entitled to military protection like Government property.

20. Red Cross general hospitals may be organized at such places in the home country as the Secretary of War may approve for the reception and treatment of sick and wounded soldiers. They may be organized in connection with a civil hospital or group of hospitals, or where there are suitable buildings and grounds, public or private, available. Such general hospitals when organized shall be registered in the office of The Adjutant General.

Red Cross general hospitals may be taken over by the War Department and administered as Army hospitals under such conditions as may be mutually agreed upon, or they may be administered as Red Cross units under such conditions as to allowances, reports, and the control of the military patients as the Secretary of War may prescribe.

The organization of general hospitals shall in general conform to that of the Army general hospitals, but as to the number of beds and personnel and details of organization shall be such as the Secretary of War may approve upon the recommendation of the Surgeon General. Acceptance for registration shall be regarded as evidence of approval. Provision will be made in the organization of Red Cross general hospitals for a visiting staff and for resident physicians or interns.

All medical officers of the above units shall be physicians, surgeons, or specialists in good standing who have been selected by the Director General of Military Relief of the American National Red Cross.

21. Convalescent homes will be such private residences or other buildings or institutions as are accepted by the American Red Cross as complying with the necessary conditions for providing accommodation for disabled officers and men who require no further active medical or surgical treatment, and who are awaiting discharge from the service on account of permanent disability. The expenses in connection with the upkeep of convalescent homes will be met entirely by private funds, except that an allowance for subsistence may be made by the Government when desired. Convalescent homes will be at all times subject to inspection by duly authorized representatives of the War Department.

22. A register will be kept in the office of the Surgeon General of the Army, upon which will be entered the name, place, strength, equipment, and efficiency of organized Red Cross units. No organization will be entered on the register, however, unless it shall have been inspected and approved by a representative of the War Department. When specially authorized, medical officers of the Army detailed for duty with the Red Cross may act as representatives of the War Department for the purpose of inspecting general and base hospitals and other military Red Cross units. In such cases their reports shall be made directly to the officer giving such authorization, a copy being furnished the Director General of Military Relief. A Red Cross unit that has been inspected and found qualified will be carried on the register for one year after date of such inspection.

Applications from Red Cross organizations for entry upon the Surgeon General's register will be forwarded through Red Cross channels to The Adjutant General of the Army.

Applications from Red Cross organizations borne on the Surgeon General's register, for continuance on said register, will be submitted annually on or before June 1 through Red Cross channels to The Adjutant General of the Army.

23. Uniforms: Members of organized units serving under the Medical Department will wear, if members of the Officers' Reserve Corps or Enlisted Reserve Corps, the uniform of these corps. Otherwise the uniform prescribed by the central committee and approved by the War Department will be worn. Their equipment will be similar to that used in the sanitary service.

24. The personnel serving with the land and naval forces in time of war or threatened hostilities will, while proceeding to their place of duty, while serving thereat, and while returning therefrom, be transported and subsisted at the cost and charge of the United States. Red Cross supplies that may be tendered as a gift and accepted for use in the sanitary service will be transported at the cost and charge of the United States.

25. Suitable quarters or tentage will be provided by the Quartermaster Corps for Red Cross units called into the sanitary service by proper authority.

Titles, Assimilated Rank, and Uniform in Foreign Countries Constituting the Theater of Active War.

26. The President, having been directed to employ all the resources of the Government in the prosecution of the war, the existence of which was recognized by the joint resolution of the Senate and House of Representatives, April 6, 1917, has accepted the cooperation and assistance of the American National Red Cross with the land and naval forces of the United States, under the provisions of the act of Congress approved April 24, 1912, and also the extension by the American National Red Cross of its humanitarian services to the armies and to the civilian population of countries now at war with the Imperial German Government.

27. To facilitate the discharge of their authorized functions, duly qualified members other than units, sections, and individuals accepted for service by the War Department and incorporated

in the commissioned or enlisted strength of the Medical Department of the Army (pars. 6–8, Regulations Governing the Employment of the American Red Cross, December 18, 1916) are recognized by titles with assimilated rank and for appropriate duties, as shown in the following table:

OFFICIALS.

Grade.	Title.	Assimilate rank.	Duties.
1	Chairman central committee	Major general	Indicated by title.
	Chairman war council	do	Do.
2	Members of war council	Brigadier general	Do.
	Vice chairman central committee.	do	Do.
3	Director general	Colonel	1. In charge civilian relief. 2. In charge military relief.
4	Assistant director general	Lieutenant colonel	1. Indicated by title. 2. Directors of certain bureaus. 3. Other duties of like importance.
	Commissioner	do	1. Commissioners to any theater of war (as France, Italy, Russia, etc.).
5	Director	Major	1. Directors of certain bureaus. 2. Representing American National Red Cross at Army or corps headquarters; at headquarters of line of communications or base abroad; or at a divisional camp or cantonment in the United States. 3. Base hospitals. 4. Supply depots. 5. Other duties of like importance.
6	Assistant director	Captain	1. Representing the American National Red Cross with any detachment of the Army less than above. 2. Storekeeper. 3. Assistant to any official of higher grade. 4. Adjutant or quartermaster of a base hospital. 5. Other duties of like importance.
7	do	First lieutenant	

EMPLOYEES.

Grade.	Title.	Assimilate rank.	Duties.
8	Secretary	Sergeant major	Clerical.

RED CROSS BASE HOSPITALS.

Grade.	Title.	Assimilate rank.	Duties.
9	Red Cross master hospital sergeant.	Master hospital sergeant, Medical Department.	Base hospitals.
10	Red Cross hospital sergeant	Hospital sergeant, Medical Department.	Do.
11	Red Cross sergeant first class	Sergeant first class, Medical Department.	Do.
12	Red Cross sergeant	Sergeant, Medical Department.	Do.
13	Red Cross Corporal	Corporal, Medical Department.	Do.
14	Red Cross cook	Cook, Medical Department.	Do.
15	Red Cross private first class	Private first class, Medical Department.	Do.
16	Red Cross private	Private, Medical Department.	Do.
17	Red Cross laborer	do	Any duty imposed.

28. Officials (grades 1–7, inclusive) will be nominated by the chairman of the war council, and, if properly qualified, will be given commissions signed by the Secretary of War and countersigned by the chairman of the war council. These commissions confer no military authority, obligation, or other incident attached to rank or office, nor any right to pay or allowances of similarly described grades in the United States Army. They serve as certificates of identity authorized by paragraph 5 of the proclamation by the President published in General Orders, No. 170, War Department, 1911. They indicate to members of the land and naval forces that officials of the assimilated rank indicated in their respective commissions are persons in whom the Commander in Chief and the American National Red Cross have confidence and for whom the above authorities enjoin cooperation in the discharge of their functions and that courtesy and respect due to persons designated for such important duties to humanity.

29. Warranted employees (grades 8–13, inclusive) will be appointed by the proper superiors of the American National Red Cross, being given warrants signed by officials designated by the American National Red Cross.

Employees (grades 14–17, inclusive) will be given certificates of identity signed by officials designated by the American National Red Cross.

The same restrictions upon military authority, obligations, pay, allowances, etc., described in paragraph 3 as applicable to commissions, apply to warrants and certificates of identity.

30. To avoid the presence in European theaters of war of persons who may not be acceptable to the authorities of any foreign Government or in whose loyalty there may not be placed undoubted confidence by the Government of the United States as well as of such Governments, the names, residence, and former employment of each member of the American National Red Cross below grade 7 who is to be sent abroad will be furnished to The Adjutant General of the Army for transmission to the Chief, War College Division of the General Staff Corps. If employed abroad, similar information will be furnished the commanding general, United States forces in France.

31. Pursuant to authority conferred by section 125 of the act of Congress approved June 3, 1916, the American National Red Cross is designated by the Secretary of War as an organization the members of which are permitted to wear their prescribed uniforms; in this case, the uniform of the United States Army, or such other uniform as may be recommended by the American National Red Cross and approved by the Secretary of War.

32. As insignia of title and assimilated rank the following distinctive marks are prescribed, to be worn as indicated:

(*a*) On cap, hat, or helmet.

Grades 1–7, inclusive: Greek cross in red enamel above the coat of arms of the United States in bronze metal.

Grades 8–17, inclusive: Greek cross in red enamel.

(*b*) On both sides of collar of coat or shirt.

Grades 1–17, inclusive: The letters "U. S." in bronze metal and Greek cross in red enamel, placed as are the U. S. and corps insignia of officers of the Army.

(*c*) On both sleeves of coat or shirt, midway between the elbow and the end of sleeve.

Grade 1: Horizontal band of blue cloth, $\frac{3}{4}$ inch in width about the arm. Two stars of silver metal, 1 inch apart and 1 inch above the band, and a Greek cross of red cloth 1 inch above the interval.

Grade 2: Same as 1, with one star 1 inch above center of band, in lieu of two stars.

Grade 3: Five bands of blue cloth, each $\frac{3}{8}$ inch in width and $2\frac{1}{2}$ inches in length, midway between elbow and end of 1 inch above the band, and a Greek cross of red cloth 1 inch above center of upper band.

Grade 4: Same as 3, with four blue bands.

Grade 5: Same as 3, with three blue bands.

Grade 6: Same as 3, with two blue bands.

Grade 7: Same as 3, with one blue band.

When dress uniform is worn, bands will be of gold braid instead of blue cloth.

Grades 8–14: Of same forms and in same positions as prescribed for chevrons of similar grades of the enlisted strength of the Army, but of dark-blue cloth with Greek cross in red cloth 1 inch above each chevron.

Grades 15–17: Greek cross of red cloth on sleeve midway between shoulder and elbow.

32. (1) Line 19, grade 3: Change "five" to "six."

(2) Line 23, grade 4: Change "four" to "five."

(3) Line 24, grade 5: Change "three" to "four."

(4) Line 25, grade 6: Change "two" to "three "

(5) Line 26, grade 7: Change "one blue band" to "two blue bands." (*S. R. No. 61, C, No. 1, Apr. 1, 1918.*)

32. (Changed by S. R. No. 61, C. No. 1.) Change subparagraph *a* to read as follows:

a. On cap, hat, or helmet.

Grades 1–7, inclusive: Greek cross in red enamel beneath the coat of arms of the United States in bronze metal.

Grades 8–17, inclusive: Greek cross in red enamel. (*S. R. No. 61, C. No. 3, Dec. 30, 1919.*)

33. Uniform and insignia will be supplied by the American National Red Cross.

34. The use of military titles, rank, and uniform is authorized only for the American National Red Cross representatives actually in foreign countries constituting the theater of active war.

34. Except as noted below, for base hospital units, the use of military titles, rank, and uniform is authorized only for the American National Red Cross representatives actually in foreign countries constituting the theater of active war.

The use of military titles and rank and of the uniform of the United States Army, as indicated in paragraphs 31 and 32 above (omitting the coat of arms of the United States and the letters "U. S."), is authorized for base hospital units organized by the American National Red Cross upon request of the Surgeon General, United States Army, when the personnel of these units are on duty as members thereof.

The wearing of forest green or light gray uniform by representatives of the Red Cross is regulated by Circular No. 140, War Department, December 12, 1918. (*S. R. No. 61, C. No. 2, Aug. 16, 1919.*)

34. (Changed by S. R. No. 61, C. No. 2.) Strike out the last subparagraph. (*S. R. No. 61, C. No. 3, Dec. 30, 1919.*)

35. The following is the prescribed uniform for representatives of the American Red Cross engaged in field service with the Army in the United States:

a. For division directors of military relief and assistants, field directors, associate field directors, and assistants other than stenographers, clerks, or privates:

(1) Overcoat of forestry green cloth.

(2) Norfolk jacket and riding breeches of forestry green cloth.

(3) Long trousers of forestry green cloth, for use when off duty.

(4) Forestry green flannel or cotton shirt.

(5) Black necktie.

(6) Campaign hat (United States Army style), Stetson, with officers' black and gold cord.

(7) Dark tan shoes and leather leggins, or field boots. (Riding boots or spurs should not be worn.)

(8) Cap (United States Army style) of forestry green cloth with braid to match, with United States Army coat of arms with enamel red cross directly beneath.

(9) Insignia: A Greek cross of red enamel shall be worn on the shoulder straps of both jacket and overcoat. The initials "A. R. C." in bronze will be worn on the shoulder straps of both jacket and overcoat, placed at the lower end of strap with the red cross ½ inch above the initials. When uniform is worn without jacket, initials "A. R. C." will be worn on right side of shirt collar and enamel red cross on left side, both placed 1 inch from front of collar and parallel to lower line of collar.

(10) American Red Cross rank insignia: The Red Cross ranking will be indicated as follows: On the jacket will be worn ½ inch forestry green braid completely around the sleeve, 2½ inches above the bottom of the sleeve; and above this will be set ⅜-inch dark blue stripes, 2½ inches long, ¼ inch apart to indicate the rank or grade.

(*b*) The various grades of officers are distinguished as follows:

Division director of military relief, 4 blue stripes.
First assistant division director of military relief, 3 blue stripes.
Second assistant division director of military relief, 2 blue stripes.
Third assistant division director of military relief, 1 blue stripe.
Field director of camp service, 3 blue stripes.
First assistant field director, 2 blue stripes.
Second assistant field director, 1 blue stripe.
Associate field director, hospital service, 2 blue stripes.
Assistants to associate field director, 1 blue stripe.
Associate field director, home service, 2 blue stripes.
Assistants to associate field director, 1 blue stripe.

(*c*) For noncommissioned officers and privates:

The same as for officers, with the following exceptions:

(1) Forestry green spiral puttees or canvas leggins will be worn instead of the leather leggins prescribed for officers.

(2) No long trousers will be worn.

(3) The officers' insignia will not be worn. There will be no stripes or bands. A Greek cross of red cloth should be worn stitched on both sleeves of Norfolk jacket, overcoat, and shirt, the bottom of the cross to be 4½ inches above the bottom of the cuffs. No insignia or cord will be worn on hat.

(4) No cap will be worn. (*S. R. No. 61, C. No. 3, Dec. 30, 1919.*)

Standards of Physical Examination for Entrance into the United States Army.

SPECIAL REGULATIONS NO. 65, REVISED NOVEMBER 8 1918.

SECTION I.—PRELIMINARY STATEMENT AND RULES.

1. The purpose of the Standards of Physical Examination is to secure greater efficiency and uniformity in making physical examinations in the Army. Medical examiners should consider the standards as a guide to their discretion; therefore they are not to be construed too strictly or arbitrarily. The object is to procure men who are physically fit, or who can be made so, for the rigors of field service, or for special and limited service, and the determination of these questions is left to the judgment and discretion of the examining boards, appointed under authority of the selective-service law, and to the military examining surgeons at mobilization camps and other Army posts and stations.

2. In examination of applicants for commissions in the United States Army during the emergency, only those individuals should be accepted who come within the physical standards of acceptance for general military service, except that the minimum requirements for vision acuity for candidates for commissions for combatant service are 20/100 in either eye or both eyes, without glasses, if correctible to normal by the use of glasses.

An applicant for commission in one of the various staff corps and departments may be accepted provided the applicant comes within the standard of acceptance for special and limited military service, as that term is used in these regulations, if the applicant possesses special qualifications for the position and his appointment is requested by the chief of the department concerned.

If the registrant has been placed by his draft board in class 5–G, he may be accepted for commission in staff departments provided the applicant's physical defects will not interfere with the efficient performance of his duties, and provided further that the Surgeon General waives such physical defects.

These standards do not apply to applicants for permanent commissions or to candidates for West Point.

3. As the physical standards established by these regulations apply to voluntary applicants for enlistment as well as to registrants under the selective-service act, the term "registrants," as used therein, may be considered as including applicants for enlistment where such interpretation is necessary to a proper application of the text.

4. Voluntary applicants for enlistment who do not come within the standards of acceptance for general military service as applied to registrants under the selective-service act will be rejected for all military service unless the defects are waived by authority of The Adjutant General of the Army.

5. Under the Selective Service Standards (Form 75, P. M. G. O.), local boards have original jurisdiction, subject to review on appeal to district boards, to accept or reject registrants for military service, as follows:

(*a*) Registrants who on examination are found to present conditions which fall within the proper standards shall be *unconditionally accepted* for general military service (Group A).

(*b*) Registrants who on examination are found to suffer from remediable defects which fall within the proper standards may be accepted for general military service in the deferred remediable group (Group B).

Group B is restricted to drug addicts, to those having deformities which may interefere with the wearing of a uniform, and to a few special conditions cited in the text.

(*c*) Registrants who on examination are found to present defects which fall within the proper standards may be accepted for *special and limited* military service (Group C).

(*d*) Registrants who on examination are found to present defects which fall within the proper standards shall be *unconditionally rejected* for all military service (Group D).

(*e*) Where conditions are temporarily disabling, but tend to a spontaneous cure, induction should be delayed.

(*f*) *When a registrant has some defect for which, under the Standards of Physical Examination he would be unconditionally rejected, but which does not impair his health, he may be accepted for special or limited military service, provided that he possesses qualifications which render his induction desirable, and that such induction is specifically requested by military authorities.*

(*g*) Registrants who have been accepted by local boards for general military service and who are found by surgeons at place of mobilization physically unfit, may, if qualified for special or limited military service, be accepted for such service, provided men of that classification are needed in the camp or station at that particular time.

6. The examiner will make a complete physical examination as prescribed in these regulations, of every registrant who appears at the place of mobilization, notwithstanding the discovery during the course of the examination of a defect requiring unconditional rejection.

7. Medical examiners should be especially careful in the selection of registrants who suffer from defects of vision; defects of hearing, and with chronic discharge from the ear or ears; toxic conditions associated with abnormal conditions of the thyroid gland; valvular disease of the heart; tuberculosis; epilepsy; mental disease or deficiency, and irremediable defects of the feet. In other words, to make a good soldier the registrant must be able to see well: have comparatively good hearing; his heart must be able to stand the stress of physical exertion; he must be intelligent enough to understand and execute military maneuvers, obey commands, and protect himself; and must be able to transport himself by walking as the exigencies of military life may demand.

8. Local boards are instructed not to induct registrants accepted for general military service who are in the deferred remediable group (Group B) or for special or limited military service (Group C), until a special call has been made by the Provost Marshal General's Office for these groups of registrants.

9. *The final decision as to the acceptance or rejection of inducted men under these regulations rests with the military examining surgeons at the mobilization camps or other military stations to which the registrants are sent upon induction into the military service.*

SECTION II.—GENERAL RULES FOR EXAMINATION.

10. The physical examination should take place in a large, well-lighted room. A quiet communicating room should be used for the examination of the heart and lungs. The temperature of the room should be regulated in cold weather to prevent the registrant from becoming chilled. The registrant should be questioned about his past and his present physical condition. His mental characteristics and speech should be observed. Malingering should be borne in mind at all stages of the examination.

11. No anesthetic may be given to a registrant without his voluntary consent for the purposes of examination or to aid in the diagnosis of defects.

SECTION III.—EYES.

12. *Vision.*—To determine the acuity of vision, place the person under examination with his back to a window at a distance of 20 feet from the test types. Examine each eye separately, without glasses, covering the other eye with a card (not with the hand). The applicant is directed to read the test types from the top of the chart down as far as he can see, and his acuity of vision is recorded for each eye, with the distance of 20 feet as the numerator of a fraction and the size of the type of the lowest line he can read correctly as the denominator. If he reads the 20-feet type correctly, his vision is normal and recorded 20/20; if he does not read below the 30-feet type, the vision is imperfect and recorded 20/30; if he reads the 15-feet type, the vision is unusually acute and recorded 20/15, etc.

13. Registrants who on examination are found to present the following conditions, who are otherwise mentally and physically fit, shall be unconditionally accepted for general military service:

(*a*) Normal vision.

(*b*) Minimum vision of 20/100 in one eye and 20/40 in other eye without glasses; or 20/100 in each eye without glasses, if correctable with glasses to 20/40 in either eye.

(*c*) Conditions due to iridectomy or other operation upon the eye if the condition for which the operation was performed has been relieved and the vision is within or above the minimum standard requirements.

(*d*) Slight nystagmus.

(*e*) Slight conjunctivitis.

(*f*) Chronic simple conjunctivitis occurring in regions where trachoma is not prevalent and if easily remediable.

(*g*) Slight adhesion of the lids to the eyeball.

(*h*) Small pterygium.

(*i*) Slight injection of lids.

(*j*) Ptosis which does not interfere with vision.
(*k*) Strabismus which does not interfere with vision.
(*l*) Color blindness.

14. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service, *unless the degree of disability is obviously disqualifying.*

(*a*) A minimum vision of 20/200 in one eye and 20/40 in other (either right or left) without glasses, or 20/200 in each eye without glasses if correctable with glasses to 20/40 in either eye.

(*b*) Blindness in one eye not due to progressive organic change, with normal vision in other eye without glasses.

(*c*) Chronic conjunctivitis not trachomatous.
(*d*) Inversion of eyelids.
(*e*) Eversion of eyelids.
(*f*) Ptosis interfering with vision.
(*g*) Trichiasis.
(*h*) Epiphora.
(*i*) Chronic blepharitis.
(*j*) Extensive pterygium.
(*k*) Chronic dacryocystitis.
(*l*) Blepharospasm.
(*m*) Superficial corneal ulcer.
(*n*) Acute inflammatory diseases of the eyeball.

15. Registrants who on examination are found with the following defects shall be *unconditionally rejected* for all military service:

(*a*) Total blindness.
(*b*) Vision less than the minimum requirements for special and limited military service.
(*c*) Disfiguring cicatrices of eyes.
(*d*) Lagophthalmus.
(*e*) Pronounced exophthalmus.
(*f*) Chronic keratitis.
(*g*) Chronic recurrent inflammatory diseases of the globe.
(*h*) Deep ulcer of cornea.
(*i*) Any organic disease of the retina, choroid, or optic nerve.
(*j*) Detachment of the retina.
(*k*) Marked nystagmus.
(*l*) Loss or disorganization of either eye with less than normal vision in remaining eye.
(*m*) Glaucoma.
(*n*) Diplopia due to paralysis of the extrinsic ocular muscle.
(*o*) Abnormal conditions of eyes due to diseases of the brain.
(*p*) Malignant tumors of lids or eyeballs.
(*q*) Trachoma.

VISUAL TESTS FOR THE DETECTION OF MALINGERERS.

16. Malignerers may feign inability to open their eyes, total loss of vision in one or both eyes, or impaired vision in one or both eyes. Occasionally an inflammation in the eyes will be produced by putting sand or other irritating substance under the lids.

17. Malingerers who wish to evade military service by feigning impairment of vision may be divided into two classes, as follows:

(*a*) Those who claim total loss of vision in one eye.
(*b*) Those who claim partial loss of vision in one or both eyes.

Either group may have a normal acuity of vision or may exaggerate a defect actually present.

18. In testing for malingering the medical examiner should bear in mind that detection is more likely to result when the man is allowed to believe that his case is regarded from the first as genuine and that his story is not discredited. There is something indefinable in the bearing of the malingerer which experience alone can detect. He may be self-assertive and overconfident; he may be hesitating or evasive. Careful observation should be made of his conduct and every movement noted. The nature of the man's answer should be taken into account and considered in the light of the kind of reply that is given when a genuine refraction case is being dealt with.

19. The following equipment is necessary:

Trial frame; blank; spherical lenses, +16, +3, +0.25, −3, −2, −1, −0.25.

Two prisms, one 6° and one 10°.

Ophthalmoscope (electric battery in handle).

Condensing lens.

Loupe.

Red and green letters on glass; (*a*) letters varying in size; (*b*) spectacle frame containing red and green glasses.

Special test cards, one a duplicate, with letters reversed to use with a mirror.

Special illiterate test cards.

Mirror, large enough to reflect test cards.

One stereoscope, with special card.

Retinoscope (electric, with battery in handle).

Ruler, about 1¼ inches wide.

METHODS OF EXAMINATION.

20. *Class A.—Total loss of vision in one eye.*—(*a*) A 6° prism, base downward, is placed before the admittedly sound eye, while the man looks at a distant light or candle. If he sees two candles, binocular vision is proved. The examiner may vary the test by placing the prism before the "blind" eye, either base up or base down.

(*b*) A prism of 10°, with base outward, is placed before the "blind" eye. If there is any sight in this eye, double vision will be produced and the eye will be seen to move inward to correct it and fuse the two images.

(*c*) The alleged "blind" eye is covered: A prism of 10°, with the apex up, is placed before the "seeing" eye in such a position that its edge lies horizontally across the center of the pupil. This produces monocular diplopia. The prism is then moved upward so as to be completely in front of the good eye and at the same time the "blind" eye uncovered. If diplopia is produced or admitted, there is sight in the "blind" eye.

(*d*) Test with colored glasses and letters: This consists in directing the individual to read a row of red and green letters through a red and green glass. The red letters will be invisible to the eye that has the green glass, and vice versa, but if all the letters are correctly read irrespective of their color there must be sight in the "blind "eye. The proper illumination back of the chart must be observed.

(*e*) Test with trial glasses: A high-plus glass is placed before the good eye and a low plus or minus before the "blind" eye. If the distant type is read, the vision in the "blind" eye is good.

(*f*) The stereoscopic test: This may be made with ordinary stereoscope, the printed matter so arranged that certain portions of it are not present before one of the eyes.

(*g*) The bar test: Interpose a ruler about 1¼ inches wide vertically midway between the two eyes at about 4 to 5 inches distance; direct the man to read from a printed page with lines at least 4 inches long. If able to read the lines, binocular vision exists.

(*h*) The action of the pupil must be carefully tested, there usually being no movement to light stimulation when the eye is blind. If the examiner is not satisfied, the following examination should be made:

Oblique examination: A careful examination of the cornea should be made with the aid of a condensing lens and a loupe.

Ophthalmoscopic examination: A searching examination with the ophthalmoscope should be made, together with an estimation of the refractive error. The pupil should be dilated if necessary.

21. *Class B.—Partial loss of vision in one or both eyes.*—The most common manifestation of malingering takes the form of a statement that one eye is imperfect. Men pleading this disability may be divided into two classes: (1) Those who pretend to have a visual defect; (2) those who are aware they have a visual defect and exaggerate its effect.

No hard-and-fast tests can be prescribed for the detection of these cases. Much depends on the alertness and ingenuity of the medical examiner.

The tests with prisms are not applicable here, for there is not pretended blindness in one eye, but simply an alleged diminution of visual acuity.

(*a*) If a room 30 or 40 feet long can be obtained for testing vision, place the registrant suspected of malingering at 30 to 35 feet from the test chart. Direct him to read the letters and note the result.

He should then be brought up to 20 feet from the card and retested. If he reads the same line, he is malingering.

(*b*) Mirror tests with special test cards: Test cards are used which are identical, one having letters reversed. The registrant is directed to read the letters on the chart across the room, and then in a mirror beside it, which reflects reverse letters that are placed over his head. The letters seen in the mirror are located double the distance of the direct letters from the man being examined. The malingerer is apt to read in the mirror the line which he read on the first card, showing that his vision is twice as good as he pretends.

In order to obviate the use of test letters in the mirror test various common objects approximating the size of the 20/40 and 20/30 letters may be used by asking a registrant to differentiate between a dime and penny, a cigarette and pencil, a pen and pencil, the number of spots on playing cards, or between the different aces, held on either side of his head and reflected in the mirror at 20 feet distance.

Trial frame test: Place a trial frame upon the man's face and put before the sound eye a high convex lens (+16D), and before the "blind" eye a plane or weak lens (0.25) which will not interfere with vision. If letters placed at distance of 20 feet are read, the fraud is at once exposed.

(*c*) Oblique examination with condensing lens and loupe to determine corneal or lenticular opacities.

(*d*) Ophthalmoscopic examination: It is probable that the malingerer will resist the ophthalmoscopic examination by frequent winking or rolling of the eyes. In this event it is best to caution the man that a report of his vision must be made, and then to postpone further examination until after the next few registrants have been examined.

(*e*) Estimate the refractive error with the use of the ophthalmoscope: If no error of marked degree exists and the media and fundi are normal, the relation between the alleged vision and the refractive condition furnishes an important clue. If the error is about +4 or −2, the visual acuity could be about 20/100, but when the defect can not be accounted for objectively and the vision is brought from 20/100 to 20/50 or 20/30 by means of a low plus or minus glass, the man is malingering.

(*f*) Retinoscopy: Look for corneal and lenticular opacities and estimate refractive errors.

22. *Occupation.*—The man's occupation in civil life may have been such that it could not have been followed without more vision than he claims.

In the absence of ocular defects, continuous and persistent blepharospasm, the use of colored glasses, eye shades, or eye bandages should be regarded with suspicion.

23. *Diplopia.*—Cases of malingering are occasionally met with in which the men complain that they see double. These must be investigated with the application of the ordinary tests as if they were genuine, with every precaution taken to guard against a serious nervous lesion being overlooked.

SECTION IV.—EARS.

24. *Hearing.*—Place the registrant facing away from the assistant, who is 20 feet distant, and direct him to repeat promptly the words spoken by the assistant. If the registrant can not hear the words at 20 feet, the assistant should approach foot by foot, using the same voice, until the words are repeated correctly. Examine each ear separately, closing the other ear by pressing the tragus firmly against the meatus; the examiner should face in the same direction as the registrant and close one of his own ears in the same way as a control. The assistant should speak in a low conversational voice (not a whisper), just plainly audible to the examiner, and should use numerals, names of places, or other words or sentences until the condition of the applicant's hearing is evident. The acuity of hearing should be expressed in a fraction, the numerator of which is the distance in feet at which the words are heard by the registrant and the denominator the distance in feet at which the words are heard by the normal ear; thus 20/20 indicates normal hearing, 10/20 partial hearing of a degree indicated by the fraction. If any doubt as to the correctness of the answer is given, the registrant should be blindfolded and a watch should be used, care being taken that the individual does not know the distance from the ear at which it is being held. The watch used should be one whose ticking strength has been tested by trial on a normal ear.

25. Registrants who on examination present the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal hearing.

(*b*) Hearing in each ear of 10/20 or better.

26. Registrants who on examination present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Deafness in one ear with normal hearing in the other ear.

(*b*) Hearing in one or both ears less than 10/20 but more than 5/20.

(*c*) Perforation of membrana tympani without discharge, definitely determined by otoscopy.

(*d*) Loss of one or both external ears, if the registrants have followed a useful vocation in civil life and the deformity is not too greatly disfiguring.

27. Registrants who on examination present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Hearing in one or both ears of less than the minimum hearing required for special and limited military service. (See par. 26*b*.)

(*b*) Chronic purulent otitis media, with or without mastoiditis.

TESTS FOR MALINGERING IN HEARING.

28. Individuals who are malingerers in regard to hearing usually claim magnifications of slight imperfections on one side with a complaint of past trouble. Exaggeration of defects in hearing extends usually to declarations of total deafness on one side.

29. The following directions should be observed in examining suspected malingerers:

(*a*) In making these examinations the observer should have a skilled assistant and all communications between them should be in a low whispered voice.

(*b*) The assistant should stand at the back of the patient and should at the direction of the examiner obstruct the ears of the suspect as directed, by pressing the tragus firmly into the auditory meatus.

(*c*) The suspected malingerer should be placed in the center of the room, free from all obstructions. His eyes should be securely and completely blindfolded.

(*d*) An accurate notation should be made of which ear is deaf as claimed by the registrant. Then a critical examination of the auditory canal, membrana tympani, and for the patulency of the Eustachian tubes should follow.

(*e*) Then an accurate test of the normal ear should be made. Care should be exercised not to allow the suspect to hear figures or other signs as to the result of examination.

(*f*) If the suspect gives markedly conflicting statements when the normal ear is tightly plugged as to the distance at which he hears the voice or accumeter, it is fair to assume he is a malingerer.

(*g*) The simplest and most available test for malingering is the use of an ordinary binaural stethoscope. One earpiece, the one to be applied to the normal ear, is packed tightly with a wad of absorbent cotton, and the earpieces are placed in the suspect's ears. The examiner speaks in a soft tone or counts into the bell-shaped chest portion of the stethoscope, and the suspect is told to repeat what he hears. The tubes are removed from the ears, and the assistant is told to stop the normal ear. The same words or numerals are again repeated. The suspect will now claim failure to hear the words or numerals which he had previously heard through the tube with the ear stated to be deaf.

(*h*) Erhard's test is another simple method for malingerers which requires no special apparatus. If the external auditory canal of a normal ear is tightly packed with absorbent cotton, it will still conduct sound waves to a limited degree; a loud-ticking watch even under these circumstances being heard about 1 or 2 meters. The suspect has his ear which is stated to be deaf stopped, and then the test is made with the hearing of the normal ear, the suspect being told to count the ticks of the watch. The suspect's normal hearing ear is then stopped and the testing is made with the supposed deaf ear. Under this test, if he claims failure to hear the watch under 1 meter, he is malingering.

(*i*) The Chiman-Moos test is made with the C2 tuning fork. The vibrating tuning fork is held at equal distances from each ear. The suspect may claim that he hears it better in the normal ear. The vibrating tuning fork is then placed on the vertex of the skull. The suspect hearing it equally well in both ears will at first hesitate and then state he hears it better in the normal ear. In diseases of the conducting apparatus he should hear it better in the diseased ear. If now the external meatus of the normal ear is tightly closed and the vibrating tuning fork is placed upon the vertex of the skull, the individual with the diseased ear will state he hears it better in the normal closed ear, or it may be impossible for him to decide in which ear he perceives the tone better. The suspect, with the normal ear tightly obstructed, will state that he does not perceive the sound of the fork when thus placed on the vertex of the skull.

SECTION V.—MOUTH, NOSE, FAUCES, PHARYNX, LARYNX, TRACHEA, AND ESOPHAGUS.

30. Registrants who on examination are found to present the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal conditions of the mouth, nose, fauces, pharynx, larynx, trachea, and esophagus.

(*b*) Enlarged tonsils.

(*c*) Adenoids.

(*d*) Small benign tumors of the nasal and buccal mucous membrane.

(*e*) Deviation of the nasal septum which does not seriously interfere with nasal breathing.

(*f*) Acute primary sinusitis, provided the acceptance of the registrant is temporarily deferred for reexamination if after a reasonable time the sinusitis has disappeared.

(*g*) Laryngitis manifested by hoarseness, laryngeal cough, and congestion of the vocal chords, confirmed by laryngoscopy.

(*h*) Paralysis of the vocal chords, if it appears to be temporary in character.

(*i*) Aphonia without objective findings by laryngoscopy or other measures, and which in the opinion of the examiners is due to functional nervous conditions.

(*j*) Alleged stricture of the esophagus which is unattended by evidence of organic disease of the esophagus as shown by the passage of a stomach tube or an esophageal bougie, or by a fluoroscopic examination while the registrant is swallowing a bismuth mixture.

31. Registrants who on examination present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Deviation of the nasal septum, though it markedly interferes with nasal breathing.

(*b*) Paralysis of the vocal chords, and which does not appear temporary in character, if it permits the registrants to follow a useful vocation in civil life.

(*c*) Aphonia, with attendant conditions, which disqualify for general military service, if they have followed a useful vocation in civil life.

(*d*) Partial ankylosis of the lower jaw.

(*e*) Perforation of the hard palate.

(*f*) Moderate deformity of the structures of the mouth which does not seriously interfere with mastication or speech.

32. Registrants who on examination present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Irremediable deformities of the mouth, throat, and nose which interfere with the mastication of ordinary food, with speech, or with breathing.

(*b*) Tuberculosis of the structures of the mouth, larynx, fauces, nose, or esophagus.

(*c*) Cancer of the structures of the mouth, nose, throat, larynx, or esophagus.

(*d*) Destructive syphilitic diseases of the mouth, nose, throat, larynx, or esophagus.

(*e*) Laryngeal paralysis, due to pressure from aneurysm or tumor.

(*f*) Permanent tracheostomy.

(*g*) Stricture of the esophagus.

(*h*) Permanent gastrostomy.

(*i*) Chronic sinusitis of the accessory sineses of the nose. (The diagnosis should be established upon chronic nasal discharge, presence of large nasal polypi, and other signs and symptoms reinforced by transillumination or X-ray plate, or both.)

(*j*) Chronic atrophic rhinitis with offensive odor. (Ozena.)

33. Medical examiners should make use of laryngoscopy, transillumination of the head, and X-ray plates, when available, to determine more definitely the physical fitness of registrants who have defects involving the upper air passages, head, or esophagus.

SECTION VI.—DENTAL REQUIREMENTS.

34. Registrants who on examination are found to present the following conditions, if otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal teeth.

(*b*) A minimum of three serviceable natural masticating teeth above and three below opposing and three serviceable natural incisors above and three below opposing. (Therefore, the minimum requirements consist of a total of six masticating teeth and of six incisor teeth. All of these teeth must be so opposed as to serve the purpose of incision and mastication.)

35. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Dental defects which are greater than the minimum dental requirements for general military service.

36. *Definitions.*—(*a*) The term "masticating teeth" includes molar and bicuspid teeth, and the term "incisors" includes incisor and cuspid teeth.

(*b*) A natural tooth which is carious (one with a cavity), which can be restored by filling, is to be considered as a natural serviceable tooth.

(*c*) Teeth which have been (see (*b*)) restored by crowns or dummies attached to fixed bridge work, if well placed, shall be considered as serviceable natural teeth, when the history and the appearance of these teeth are such as to clearly warrant such assumption.

(*d*) A tooth is not to be considered a serviceable natural tooth when it is involved with excessively deep pyorrhea pockets or when its root end is involved with a known infection that has or has not an evacuating sinus discharging through the mucous membrane or skin.

SECTION VII.—SKIN.

37. Registrants who on examination are found to present the following conditions, if otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal skin.

(*b*) Acute diseases of the skin which ordinarily run a temporary course.

(*c*) Diseases which are trivial in character and which do not interfere with the general health and are not incapacitating. Among these common and usually trivial diseases may be enumerated:

Acne.
Anomalies of pigmentation.
Scars not extensive, disfiguring, nor incapacitating in character.
Condylomata which are not extensive.
Staphylococcic and streptococcic skin infections.
Acute eczemas.
Naevi which are not greatly disfiguring.
All forms of pediculosis.
All forms of ringworm.
Scabies.
Mild and not extensive psoriasis.
Warts.
The secondary syphilitic lesions of the skin.

38. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Simple ulcers or other defects of the skin which are curable. (See par. 55*s*.)

(*b*) Defects due to diseases of the skin, either acute or chronic, which disqualify for general military service, if the registrants have successfully followed a useful vocation in civil life.

39. Registrants who on examination present the following defects of the skin shall be *unconditionally rejected* for all military service:

(*a*) Long-existing skin diseases or long-existing ulcers of the skin which are so severe or so disfiguring as to incapacitate the registrant for the duties of a soldier, or so disfiguring as to render the registrant objectionable in common social intercourse.

(*b*) Actinomycosis.

(*c*) Dermatitis herpetiformis of long duration.

(*d*) Epidermolysis bullosa.

(*e*) Forms of universal dermatitis of long duration.

(*f*) Glanders.

(*g*) Idiopathic multiple hemorrhagic sarcoma.

(*h*) Mycosis fungoides.

(*i*) Pemphigus chronicus of long duration.

(*j*) Pemphigus foliaceous.

(*k*) Pemphigus vegetans.

(*l*) Cancer, including pigmented moles undergoing degeneration.

(*m*) Lupus.

(*n*) Syphilitic lesions ulcerative in character showing much destruction of tissue which if healed would be unsightly or so scarring as to incapacitate the registrants for military service.

SECTION VIII.—HEAD.

40. Registrants who on examination are found to present the following conditions, if otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal skull.

(*b*) Moderate deformities of the bones of the skull of the character of depressions, exostoses, etc., and unassociated with evidence of disease of the brain, spinal cord, or peripheral nerves, and which would not prevent the registrant from wearing military headgear.

(*c*) Defects which are apparently temporary in character due to recent injuries. (This includes contusions and other wounds of the scalp and concussion. Registrants with these defects should have the final examination temporarily deferred.)

41. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Decompression operation of the skull unassociated with marked bulging at the site of operation.

42. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Deformities of the skull of the nature of depressions, exostoses, etc., of a degree which will prevent the registrants from wearing military headgear.

(*b*) Deformities of the skull of any degree associated with evidences of disease of the brain, spinal cord, or peripheral nerves.

SECTION IX.—SPINE.

43. Registrants who on examination are found to present the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal spine.

(*b*) Lateral curvature ot the spine of 2 inches or less from the normal mid line, if the mobility and weight-bearing power are good.

(*c*) Fracture of the coccyx.

(*d*) Temporary defects in the form of recent contusions or sprains of the spinal column.

(*e*) Pilo-nidal sinus (this usually presents itself in the region between the coccyx and anus) if unattended with disease of the bone as shown by an X-ray plate.

44. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Lateral deviation of the spine from the normal mid line of more than 2 inches and less than 3 inches.

(*b*) Nontuberculous diseases of the spine which are unassociated with such rigidity that the registrant has been incapacitated from following a useful vocation in civil life.

(*c*) Fracture of the spine or pelvic bones which have healed without defects and which have not interfered with their following a useful vocation in civil life.

45. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Extensive disease of the vertebræ.

(*b*) Tuberculosis of any portion of the vertebral column.

(*c*) Abscess of the spinal column.

(*d*) Osteoarthritis, partial or complete, of the spinal column.

(*e*) Healed fractures of the vertebræ or pelvic bones with associated disqualifying rigidity.

(*f*) Lateral deviation of the spine from the normal mid line of more than 3 inches.

46. When medical examiners are in doubt concerning the cause and the extent of the diseases of the vertebræ, an X-ray plate of the spine should be made.

SACRO-ILIAC AND LUMBO-SACRAL JOINTS.

47. Registrants who on examination are found to present the following conditions, if otherwise mentally and physically fit, shall be unconditionally accepted for general military service:

(*a*) Normal sacro-iliac and lumbo-sacral joints.

(*b*) Complaint of disease of the sacro-iliac and lumbo-sacral joints which is unassociated with objective signs and symptoms at the first examination and which, on reexamination, after a reasonable period of time, is again found negative.

48. Registrants who on examination are found to present the following defect, if otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Disease of the sacro-iliac and lumbo-scaral joints of a degree which disqualifies for general military service, if otherwise mentally and physically fit and if the registrants have followed a useful vocation in civil life.

49. Registrants who on examination are found to suffer from the following defect shall be *unconditionally rejected* for all military service:

(*a*) Disease of the sacro-iliac and lumbo-sacral joints which is of a chronic type and is obviously associated with pain referred to the lower extremities, muscular spasm, postural deformities, and limitation of motion in the lumbar region of the spine.

SECTION X.—SCAPULAE.

50. Registrants who on examination are found to present the following conditions, if otherwise physically and mentally fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal scapulae.

(*b*) Prominent scapulae due to other causes than paralysis.

51. Registrants who on examination are found to present the following defect shall be *unconditionally rejected* for all military service:

(*a*) Prominent scapulae due to paralysis.

SECTION XI.—THE EXTREMITIES.

52. Registrants who on examination are found to present the following conditions shall be *unconditionally accepted* for general military service:

(*a*) Normal upper and lower extremities with normal function.

(*b*) Ancient or recent fractures which have healed spontaneously with no resulting impairment of function.

(*c*) Paralysis of a muscle or group of muscles that does not interfere with function. (See par. 102.)

(*d*) Benign tumors of bone or defects due to their removal when the condition does not interfere with the function of the extremity or the joint involved.

(*e*) Recent injury of a bone or joint with or without fracture or dislocation which in the opinion of the examiners is only temporarily incapacitating. (Registrants with these defects should be given a period of time not less than six weeks for recovery before the final examination is made.)

(*f*) Defects of bone or joint due to healed tuberculosis when the tuberculosis has not shown evidence of activity at any time during the period of 10 years immediately preceding the examination.

(*g*) Absent left thumb.

(*h*) Loss of one finger of either hand, with the exception of the right index finger.

(*i*) Scars and deformities of moderate degree of the hand or hands which do not interfere with normal function.

(*j*) Stiff fingers of a degree not to interfere with function.

(*k*) A low or even absent longitudinal arch, if the foot is otherwise practically normal in shape, flexibility, and weight-bearing capacity.

(*l*) Slight hallux valgus which is unassociated with exostoses or bunion of any size.

(*m*) Clubfoot of slight degree if the deformity has been corrected to the degree that the tarsus, metatarsus, and phalanges are flexible and the condition permits the wearing of a military shoe.

(*n*) Slight claw toes not involving obliteration of the transverse arch and which do not interfere with the wearing of a military shoe.

(*o*) Hammer toe which is flexible and which does not interfere with the wearing of a military shoe. (Hammer toe usually involves the second digit and unless it is rigid is not a disqualifying defect.)

(*p*) Absence of one or two of the small toes of one or both feet if the function of the foot is good.

(*q*) Ingrowing toenails.

53. Registrants who on examination present the following remediable defects, who are otherwise mentally and physically fit, are properly placed in Group B and should be returned to the jurisdiction of the local board:

(*a*) Ununited fractures if in the judgment of the examiners they are remediable with resulting good function.

(*b*) Benign tumors of bone or joint which interfere with function and which in the judgment of the examiners are remediable.

(*c*) Other defects which in the opinion of the examiners are disqualifying but remediable.

54. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service, unless the degree of disability is obviously disqualifying:

(*a*) Loss of thumb or index finger of right hand.

(*b*) Loss of two fingers of either hand, including the right index finger.

(*c*) Web fingers.

(*d*) Ganglion and other benign tumors of the hand or fingers.

(*e*) Moderate deformities of one or both upper extremities which do not and have not interfered with function to a degree to prevent the registrant from following a useful vocation in civil life.

(*f*) Internal derangement of the knee joint.

(*g*) Abduction and pronation (knock-ankle) when this condition is not associated with rigidity of the tarsal joints or with deformity of the foot. (This defect is remediable with proper foot exercises and with correct shoes.)

(*h*) Loss of great toe.

(*i*) Loss of dorsal flexion of great toe.

(*j*) Hammer toe with rigidity.

(*k*) Web toes.

(*l*) Other defects of the foot which disqualify for general military service but do not prevent the registrant from wearing a military shoe and which have not prevented him from following a useful vocation in civil life.

(*m*) Moderate deformities of one or both lower extremities which do not and have not interfered with function to a degree to prevent the registrant from following a useful vocation in civil life.

(*n*) Adherent scars of the skin and soft tissues of an extremity.

(*o*) Paralysis of a muscle or group of muscles that interferes with function. (See par. 102.)

55. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Loss of both thumbs.

(*b*) Loss of more than two entire fingers of one hand.

(*c*) Extensive disease of long duration of one or more of the large joints, with or without sinuses.

(*d*) Tuberculosis of a bone or joint. (The diagnosis should be based upon the presence of swelling, tenderness, muscular spasm, restriction of joint motion, and the evidence of bone destruction shown by an X-ray plate.)

(*e*) A history of tuberculosis of a bone or joint when the tuberculosis has been active at some time during the period of 10 years prior to the examination.

(*f*) Old, irremediable, ununited fractures or united fractures with deformity sufficient to interfere markedly with function.

(*g*) Malignant tumors.

(*h*) Extensive disease of long duration involving a number of joints of the upper and lower extremities.

(*i*) Old, unreduced dislocations which have interfered with the registrant following a useful vocation in civil life.

(*j*) Disease of shoulder, elbow, or wrist with resulting limitation of motion.

(*k*) Disease of bone or joint healed with such resulting deformity that the function is disturbed to a degree that it will interfere with military service.

(*l*) Muscle paralysis or contraction which disturbs function to the degree of interference with military service.

(*m*) Excessive curvature of the bones of the forearm or arm which would interfere with military drill.

(*n*) Excessive curvature of the bones of the leg or thigh.

(*o*) Excessive knock-knee.

(*p*) Excessive bow legs.

(*q*) Adherent scars of skin or soft tissue to a degree which seriously interferes with function.

(*r*) Excessive varicose veins.

(*s*) Varicose veins of any degree associated with edema or ulcer of the skin.

(*t*) Absent longitudinal arch of the foot associated with one or more of the following conditions:

Limitation of dorsal flexion.

Rigid metatarsal and subastragaloid joints.

Rigid toes.

Marked pronation

Prominent scaphoid associated with other disabling foot conditions.

(*u*) Rigidity of the tarsus and metatarsus due to former infectious processes, with or without flat foot.

(*v*) Obliteration of the transverse arch associated with permanent flexion of the small toes (claw toes).

(*w*) Prominence of the plantar surface of the transverse arch, especially when associated with large callosities.

(*x*) Abnormal flaccidity of the foot and toes when associated with evident severely painful symptoms.

(*y*) Abduction and pronation (knock-ankle) when associated with rigidity of the tarsal joint and painful symptoms.

(*z*) Hallux valgus if severe and associated with exostoses or a bunion of any considerable size, especially when there are signs of irritation about the joint.

(*aa*) Club foot, if correction of the condition has not been sufficient to meet the standard requirements. (See par. 52*m*.)

(*bb*) Disease of the bone or of the hip, knee, or ankle joint which seriously interferes with function and weight-bearing power.

(*cc*) Deformities due to fracture or other injury which seriously interfere with function and weight-bearing power.

(*dd*) Sciatica, which is apparently intractable and disabling, to the degree of interference with the function of walking and weight-bearing power.

(*ee*) Amputations of extremities in excess of those already cited. (See par. 5*f*.)

56. It is extremely important that registrants with defects of the feet which are not remediable by training and which prevent the inducted men from taking proper training, should not be accepted for general military service. It is quite as important that defects of the feet, which are not disabling, should not be considered disqualifying for general military service.

SECTION XII.—HEIGHT, WEIGHT, AND CHEST MEASUREMENTS.

57. Table of standard accepted measurements of height, weight, and circumference of chest.

A. *Standard accepted measurements.*

Height.	Weight.	Chest measurement.	
		At expiration.	Mobility.
Inches.	*Pounds.*	*Inches.*	*Inches.*
60	120	31	2
61	120	31	2
62	120	31	2
63	124	31	2
64	128	32	2
65	130	32	2
66	132	32½	2
67	134	33	2
68	141	33¼	2½
69	148	33½	2½
70	155	34	2½
71	162	34¼	2½
72	169	34¾	3
73	176	35¼	3
74	183	36¼	3
75	190	36¾	3¼
76	197	37¼	3½
77	204	37½	3¾
78	211	38¼	4

B. *The following variations from the standard shown in column A are permissible when the applicant is active, has firm muscles, and is evidently vigorous and healthy.*

Height.	Weight.	Chest measurement.	
		At expiration.	Mobility.
Inches.	*Pounds.*	*Inches.*	*Inches.*
60	110	30	2
61	110	30	2
62	110	30	2
63	116	30	2
64	120	30	2
65	120	30	2
66	120	30¼	2
67	120	30½	2
68	121	30¾	2
69	124	31	2
70	128	31¼	2
71	133	31¾	2
72	138	32¼	2½
73	143	32¾	2½
74	148	33½	2½
75	155	34¼	2¾
76	161	34¾	2¾
77	168	35¼	3
78	175	35¾	3

58. *Directions for taking height.*—Use a board at least 2 inches wide by 80 inches long, placed vertically, and carefully graduated to one-quarter inch between 58 inches from the floor and the top end. Obtain the height by placing vertically in firm contact with the top of the head and against the measuring rod an accurately squared board of about 6 by 6 by 2 inches—best permanently attached to graduated board by a long cord. The registrant should stand erect, with back to the graduated board, eyes straight to the front.

59. Registrants who on examination present the following conditions, if otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service.

(*a*) Those who fall within the accepted standards (A) or minimum requirements (B) for height, weight, and chest measurement given in tables, paragraph 57.

(*b*) Those whose weight is greater than the standards indicated for the height (A), provided the overweight is not so excessive as to interfere with military training.

60. Registrants who on examination are found to present conditions not within the accepted measurements for weight and chest circumference and mobility given in the table, who are otherwise mentally and physically fit, may be accepted for *special or limited* military service. But *no registrant may be accepted whose weight is less than 110 pounds.*

61. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Less than 60 inches in height.

(*b*) Less than 110 pounds in weight.

(*c*) With a chest measurement of less than 30 inches and chest mobility of less than 2 inches.

(*d*) A height of more than 78 inches.

(*e*) Overweight which is greatly out of proportion to the height, if it interferes with normal physical activity or with proper training.

62. Registrants of 76 inches or more in height should be studied for the possibility of gigantism or acromegaly.

Registrants whose chest mobility is less than 2, 2½, or 3 inches, respectively, as per the table, should be further studied to ascertain if the lack of required chest mobility is due to ignorance or to lack of practice.

63. Medical examiners should use discretion and judgment in accepting registrants with slight variations in the ratio of height, weight, and chest measurements indicated in the table. Minimum and maximum height are absolute, but when the weight is disproportionate and is believed to be due to some temporary condition, proper allowance may be made, provided it is the opinion of the examiner that the variation is correctable with proper food and physical training. But no registrant may be accepted whose weight is less than 110 pounds.

SECTION XIII.—ABDOMEN.

64. Registrants who on examination are found to present the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal abdominal wall and abdominal organs.

(*b*) Abdominal scars due to surgical operation or accident which show no hernial bulging at site of scars.

(*c*) Scar pain when found not associated with any disturbance of function of abdominal wall, stomach, or bowels.

(*d*) Jaundice when this is proved to be of a temporary character and not associated with organic disease of the gall tracts or liver, by observation and reexamination of the registrant over a period of one month.

(*e*) Complaint of weak stomach, indigestion, dyspepsia, constipation, belching, vomiting, and various other types and degrees of abdominal discomfort which are proven by examination not to be associated with organic disease, by the absence of the usual objective symptoms and signs and by such laboratory tests as may be employed.

(*f*) Blood in stools if proved to be due to slight defects, such as fissures of the anus, small hemorrhoids, or superficial small ulcers of the rectum.

(*g*) Moderate enlargement of the liver unassociated with other objective evidence of disease of the liver or other organs.

(*h*) Splenic enlargement of moderate degree unassociated with evidence of other disqualifying disease.

(*i*) Moderate enlargement of the spleen due to malaria.

(*j*) Small benign tumors of the abdominal wall.

(*k*) Ptosis of the stomach and bowels unassociated with objective evidence of disturbance of function of the gastrointestinal tract. (Individuals who have ptosis of the stomach and bowels usually complain of constipation, belching of gas, heaviness in abdomen after meals, and numberless symptoms referable to the heart and nervous apparatus.)

(*l*) Mucous colitis of simple character.

(*m*) Proctitis of simple character confirmed by proctoscopy, which is not associated with ulceration of the mucous membrane.

(*n*) Intestinal parasites or their eggs in the stools.

(*o*) Internal and external hemorrhoids without prolapse of rectum.

65. Registrants who on examination are found to present the following remediable defect, and who are otherwise mentally and physically fit, are properly placed in Group B and should be returned to the jurisdiction of the local board:

(*a*) Partial obstruction of the bowel not due to organic disease.

66. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service, unless the degree of disability is obviously disqualifying:

(*a*) Hernia—inguinal, femoral, umbilical, and postoperative.

(*b*) Large benign tumors of the abdominal wall.

(*c*) Jaundice which persists beyond a period of one month and is determined at the final examination to be remediable.

(*d*) Internal hemorrhoids, with prolapse and hemorrhage.

(*e*) Proctitis associated with remediable ulcers.

(*f*) Amebic dysentery.

(*g*) Simple fistula in ano.

(*h*) Ptosis of the stomach and bowels associated with disqualifying conditions for general military service, but which permit the registrants to follow a useful occupation in civil life.

67. Registrants who on examination present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Inoperable hernia.

(*b*) Irremediable diseases of the stomach.

(*c*) Irremediable diseases of the bowels.

(*d*) Irremediable diseases of the liver.

(*e*) Irremediable diseases of the kidney.

(*f*) Achylia gastrica.

(*g*) Gastric succorrhea.
(*h*) Syphilis of the liver.
(*i*) Hydatids of the liver.
(*j*) Ulcer of the stomach or duodenum.
(*k*) Obstruction of the bowel due to organic disease.
(*l*) Chronic gastritis secondary to organic disease of other organs.
(*m*) Irremediable sinuses of the abdominal wall communicating with the hollow viscera.
(*n*) Tuberculosis.
(*o*) Irremediable stricture of the rectum.
(*p*) Multiple fistulæ of the anus.
(*q*) Schistosomum disease (blood flukes).
(*r*) Enlargement of the spleen associated with leukemia, Hodgkin's disease, or splenic anemia.
(*s*) Great enlargement of the spleen from any cause.
(*t*) Large internal and external hemorrhoids associated with prolapse of the rectum.
(*u*) Paralysis of the sphincter associated with incontinence of feces.

68. When necessary to confirm a diagnosis, medical examiners should, when possible, avail themselves of fluoroscopy and X-ray plates when examining registrants with defects of the abdominal wall or abdominal organs.

69. When medical examiners are able to command hospital facilities and the necessary diagnostic apparatus, they should, within their discretion, use test meals and chemical and microscopic examination of the stomach contents and stools.

70. Medical examiners should make use of digital rectal examination of defects referable to that region, and when necessary proctoscopy should also be utilized.

71. Registrants who are found to have parasites or their eggs in stools should have this condition indicated on Form 1010.

72. Moderate impulse produced by cough at the inguinal, femoral, or umbilical rings, or at the site of a scar is not necessarily indicative of hernia.

SECTION XIV.—NECK.

73. Registrants who on examination are found to present the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal neck.

(*b*) Nonspastic contraction of the muscles of the neck which is not of great degree and will not prevent the wearing of a uniform or military equipment.

(*c*) Simple goiter or benign thyroid tumors unassociated with toxic symptoms, provided the enlargement of the thyroid will not interfere with the wearing of a uniform or military equipment.

(*d*) Benign tumors and cysts of the neck which will not interfere with the wearing of a uniform or military equipment.

(*e*) Small benign tumors of the parotid gland which will not interfere with the wearing of a uniform or military equipment.

(*f*) Enlarged lymph glands of the neck which apparently do not interfere with the general health and which are not large enough to interfere with the wearing of a uniform or military equipment.

74. Registrants who on examination are found to present the following remediable defects, and who are otherwise mentally and physically fit, are properly placed in Group B and should be returned to the jurisdiction of the local board:

(*a*) Simple goiter or benign tumors unassociated with toxic symptoms, but so large as to interfere with wearing a uniform or military equipment.

(*b*) Enlarged lymph glands of the neck which are so large as to interfere with wearing a uniform or military equipment.

(*c*) Benign tumors and cysts of the neck which are so large as to interfere with the wearing of a uniform or military equipment.

(*d*) Large benign tumors of the parotid gland which, in the opinion of the examiners, may be removed without permanent paralysis of the seventh nerve.

75. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Exophthalmic goiter.

(*b*) Thyroid enlargement from any cause associated with toxic symptoms.

(*c*) Enlargement of the lymph glands of the neck associated with all clinical types of leukemia and Hodgkin's disease.

(*d*) Lympho-sarcoma.

(*e*) Tuberculous glands.

(*f*) Malignant tumors.

(*g*) Myxedema.

(*h*) Nonspastic contraction of the muscles of the neck which is disfiguring and unsightly or interferes with wearing a uniform or military equipment.

(*i*) Spastic contraction of the muscles of the neck.

76. Medical examiners should reject all registrants who, after careful study, are proved to suffer from thyroid toxic symptoms.

SECTION XV.—GENITO-URINARY ORGANS AND VENEREAL DISEASES.

77. Registrants who on examination are found to present the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Gonorrhea, acute or chronic, uncomplicated.

(*b*) Syphilis with remediable manifestations.

(*c*) Chancroids and the resulting infection of the lymph glands of the groin. (If, in the opinion of the examiners, registrants suffering from this defect are in a condition which would make it unsafe to themselves and to other soldiers in the cantonment their induction should be temporarily deferred until the condition is improved.)

(*d*) Gonorrheal arthritis which is determined to be temporary in character and not of itself disqualifying.

(*e*) Moderately movable kidney. (By this is meant a kidney which upon deep inspiration may be palpated below the costal margins and which is not loose within the abdominal cavity.)

(*f*) Albuminuria with or without casts which is proved by observation and repeated examination to be temporary in character.

(*g*) Absence of one or more testicles due to removal or atrophy.

(*h*) Acute cystitis which has proved to be of a temporary character by observation and repeated examination over a period not to exceed six weeks.

(*i*) Phimosis with or without adhesions of the mucus surfaces.

(*j*) Benign warts and other benign growths of the glans penis and of the prepuce.

(*k*) Amputation of the penis if a sufficient amount of the organ remains so as not to interfere with the function of micturition. (Care should be taken to fully examine registrants who present evidence of a recurrence of a disqualifying disease for which the amputation was made.)

(*l*) Varicocele of moderate size.

(*m*) Hydrocele of moderate size.

(*n*) Undescended testicle which lies within the abdominal cavity.

78. Registrants who on examination are found to present the following remediable defects and who are otherwise mentally and physically fit are properly placed in Group B and should be returned to the jurisdiction of the local boards:

(*a*) Cystitis, chronic, severe, which is remediable within the judgment of the examiners.

(*b*) Pyelitis which has been verified by cystoscopy and is deemed remediable by the examiners.

(*c*) Hydrocele of a very large size.

(*d*) Chronic gonorrheal vesiculitis or prostatitis.

79. Registrants who on examination are found to present the following defects, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Stricture of the urethra.

(*b*) Renal or ureteral calculus verified by an X-ray plate and with no evidence of disease of the kidneys.

(*c*) Benign tumor of the testicles.

(*d*) Cystitis, subacute or chronic, of mild grade.

(*e*) Benign tumor of the bladder.

(*f*) Varicocele of large size.

(*g*) Hydrocele, unless of very large size.

(*h*) Floating kidney. (By floating kidney is meant one which is freely movable within the abdominal cavity.)

(*i*) Undescended testis which lies within the inguinal canal.

(*j*) Removal of one kidney, the remaining one being healthy.

(*k*) Bed wetting.

80. Registrants who on examination are found to present the following defects shall be *unconditionally rejected for all military service:*

(*a*) Chronic nephritis. (This should be evidenced by the presence in the urine of albumin and casts, with or without blood, over a period of time sufficient to prove the persistency of the urinary findings. The examiners should require the registrants to void the urine during the period of the examination and in the presence of the physicians.) When albumin and casts are found in the urine the registrants should be reexamined not less than twice on separate days. If the urine shows albumin and casts with or without blood and this condition of the urine is associated with enlargement of the left heart, high blood pressure, and other evidences of cardio-vascular disease, the diagnosis of chronic nephritis may be made immediately. If the presence in the urine of albumin and of casts with or without blood is proved to be inconstant, and if the condition is unassociated with the cardio-vascular conditions mentioned, decision should lie within the judgment and discretion of the examiners.

(*b*) Diabetes, evidenced by the presence of glucose in the urine. (Reexamination of the urine of registrants which on the first examination is found to contain glucose should be made over a period of two or three days. The registrants should void the urine in the presence of the physicians.)

(*c*) Irremediable stricture of the urethra.

(*d*) Urinary fistula.

(*e*) Gonorrheal arthritis which is of itself disqualifying.

(*f*) Surgical kidney with or without renal calculus.

(*g*) Irremediable pyelitis.

(*h*) Cancer.

(*i*) Hydronephrosis.

(*j*) Tumors of the kidney.

(*k*) Tuberculosis of the kidney, ureter, bladder, seminal vesicles, or testicles.

(*l*) Acute nephritis which is proved by observation and reexamination not to be temporary in character.

(*m*) Chronic cystitis associated with retention of urine caused by stricture of the urethra or by disease of the central nervous system.

(*n*) Amputation of the penis if the resulting stump is insufficient to permit of normal function of micturition.

81. When it is deemed necessary, medical examiners should take advantage of cystoscopy and X-ray examination to verify diagnosis of defects of the genito-urinary organs.

SECTION XVI.—MENTAL AND NERVOUS DISEASES.

82. Registrants who on examination show the following conditions shall be *unconditionally accepted* for general military service:

(*a*) A normal nervous system.

(*b*) Who appear to have normal understanding, whose speech can be understood, who have no definite signs of organic disease of the brain, spinal cord, or peripheral nerves, and who are otherwise mentally and physically fit.

(*c*) Hysterical paralysis or hysterical stigmata and local muscular spasms which do not cause mental or physical defects disqualifying for general military service.

(*d*) Muscular tremors of moderate degree.

83. Registrants who on examination are found to suffer from the following condition, and who are otherwise mentally and physically fit, are properly placed in Group B, and should be returned to the jurisdiction of the local board:

(*a*) Drug addiction, including the habitual use of opium and its derivatives and cocaine.

84. Registraints who on examination are found to suffer from the following defects of the nervous system, who are otherwise mentally and physically fit, may be accepted for *special and limited* military service:

(*a*) Stuttering and stammering of a degree disqualifying for general military service, but which has not prevented from successfully following a useful vocation in civil life.

(*b*) Hysterical paralysis or hysterical stigmata of a degree disqualifying for general military service, but not of a character to prevent the registrants from successfully following a useful vocation in civil life.

(*c*) Tremors of such marked degree that they disqualify for general military service, but have not prevented the registrants from following a useful vocation in civil life.

85. Registrants who on examination are found to suffer from the following defects shall be *unconditionally rejected* for all military service:

(*a*) Insanity.

(*b*) Epilepsy.

(*c*) Idiocy.

(*d*) Imbecility.

(*e*) Moron. (See par. 89.)

(*f*) Chronic alcoholism.

(*g*) Stuttering or stammering to such a degree that the registrant is unable to express himself clearly or to repeat commands or to demand the countersign.

(*h*) Constitutional psychopathic state.

(*i*) Chronic essential chorea.

(*j*) Tabes (locomotor ataxia).

(*k*) Cerebrospinal syphilis.

(*l*) Multiple sclerosis.

(*m*) Paraplegia.

(*n*) Syringomyelia.

(*o*) Muscular atrophies and dystrophies which are obviously disqualifying.

(*p*) Hysterical paralysis or hysterical stigmata so serious that these defects are disqualifying for military service.

(*q*) Neuritis which is not temporary in character and which has progressed to such a degree as to prevent the registrant from following a useful vocation in civil life.

DISQUALIFYING DEFECTS.

86. The examiners may base their decisions as to mental and nervous defects upon the following brief description of some disqualifying defects:

87. *Insanity.*—All registrants should be considered insane who are committed or who have been committed to a licensed public or private institution for the care of the insane. The examiners may require proof in the form of verified records of commitment by the proper State authorities to verify the statements of the registrants.

88. *Epilepsy.*—The registrant shall not be considered an epileptic unless the claim is substantiated by characteristic scars on the tongue, face, or head, or, if the examiner is in doubt, by properly certified proof.

89. *Moron.*—An individual whose mental development is that of a child not over eight years of age, as measured by the Binet-Simon test, is not competent to learn nor to perform the duties required of a soldier.

90. *Idiocy.*—A registrant shall be declared an idiot who has been so defective in mind from birth or from early age that he is unable to guard himself against common physical danger.

91. *Imbecility.*—A registrant shall be declared an imbecile who has been so defective in mind from birth or early age as to be incapable of earning a livelihood but at the same time is able to guard himself against common physical danger.

92. *Chronic alcoholism.*—A registrant shall be declared a sufferer from chronic alcoholism when he presents a majority of the following symptoms and signs: Suffused eyes; prominent superficial blood vessels of nose and cheek; flabby, bloated face; red or pale purplish discoloration of mucous membrane of the pharynx and soft palate; muscular tremor of the protruded tongue and extended fingers; tremulous handwriting.

The history or evidence presented that the registrant has been frequently and grossly intoxicated is not of itself sufficient proof for the diagnosis of chronic alcoholism.

CLINICAL FORMS OF INSANITY.

93. *Dementia precox.*—Look for indifference, apathy, withdrawal from environment, ideas of reference and persecution, feelings of the mind being tampered with, of thought being controlled by hypnotic, spiritualistic, or other mysterious agencies, hallucinations of hearing, bodily halluci-

nations, frequently of electrical or sexual character; meaningless smiles; in general, inappropriate emotional reaction and lack of connectedness in conversation. There may be sudden emotional or motor outbursts. The history of family life and of school, vocational and personal career will usually show erratic and more or less irrational conduct.

94. *Manic-depressive insanity.*—Look for mild depression with or without feeling of inadequacy, or mild manic states with exhilaration, talkativeness, and overactivity.

ORGANIC DISEASES OF THE BRAIN, SPINAL CORD, AND PERIPHERAL NERVES.

95. *Paresis* (*general paralysis*).—The diagnosis of paresis may be made when at the examination of the registrant a majority of the following signs and symptoms are demonstrated: Argyll-Robertson pupil or pupils, facial tremor, speech defect in test phrases, and in the slurring and distortion of words in conversation; writing defects, consisting of omissions and the distortion of words. Apathetic or depressed or euphoric mood. These registrants may show memory loss or discrepancies in relating facts of life; the knee jerks may be plus, minus, or normal.

96. *Tabes* (*locomotor ataxia*).—The diagnosis of this disease should be made when, at the examination of the registrant, several of the following signs and symptoms are present: Argyll Robertson pupil or pupils; absent knee jerk; Romberg symptom; ataxia of hands or legs (especially when the eyes are closed); hypotonia; and anesthetic areas of the skin. The history of the locomotor ataxia is usually that of slow progression, of failing sexual power, and pains in the legs or back which are often described as rheumatism.

97. *Cerebrospinal syphilis.*—The prominent diagnostic signs and symptoms are headaches, varying deep and superficial reflexes, pupillary changes, ptosis, ocular palsier, facial weakness; the mental state is normal, dull, or apathetic. Comparative motor weakness may occur of one side of the body or of one extremity.

98. *Multiple sclerosis.*—The diagnosis of this disease rests upon the following signs and symptoms: Intention tremor, nystagmus, absent abdominal reflexes, increased tendon reflexes, and scanning speech; in cases of this kind the history obtained is not characteristic, but sometimes there may be a history of urinary disturbance.

99. *Paraplegia.*—The diagnosis of paraplegia from whatever cause will rest upon weakness of the lower extremities, associated with loss or increased knee jerk, Babinski reflex, or disturbance of the sphincters of the rectum and bladder, with or without girdle sensations. Sensory disturbance of the skin may or may not be present. Muscle sensibility may be diminished.

100. *Syringomyelia.*—Syringomyelia is usually evidenced by more or less loss of power and atrophy of groups of muscles of one or more extremities; disturbance of the sensations of the skin, more especially in the form of analgesias, and diminution of the temperature sense; if in the upper dorsal cord, often associated with stooped shoulder posture; if in the lower dorsal, with weakness in one or both lower extremities.

101. *Muscular atrophies and dystrophies.*—The signs and symptoms of muscular atrophies and dystrophies are: Atrophies of the small muscles of the hand and of the muscle groups of the shoulder; fibrillary twitchings. The history of these defects rarely furnishes reliable data, although it will usually be found that the registrant has shown evidences of awkwardness. There is never a history of pain in the affected muscles.

102. *Multiple neuritis.*—The chief manifestations are more or less pain in the course of the affected nerves, with tenderness over the trunks of the nerves and of the muscles supplied by them; lessened muscular power of varying degrees; more or less atrophy of muscles, with or without contraction, and evidences of trophic changes of the skin. The reflexes, deep and superficial, may be diminished or absent; the sphincters are not involved.

Existent organic nervous disease should always exclude.

For example, neuritis, of one or many nerves, while susceptible of recovery without resultant defect, is none the less a cause for rejection as long as it exists.

103. Certain after effects of organic nervous disease need not be causes for rejection, provided (1) that the disease is no longer operative and is not likely to recur, (2) that the effect left by it does not prevent a satisfactory fulfillment of military duties. Examples of such conditions are paralysis of a few unimportant muscles following poliomyelitis, slight unilateral hypertonicity as a result of an infantile hemiplegia in a man now robust, and various traumatic conditions. (See pars. 52*c* and 54*o*.)

SECTION XVII.—LUNGS AND CHEST WALL.

104. Registrants who on examination are found to present the following conditions shall be *unconditionally accepted* for general military service:

(*a*) Normal lungs.

(*b*) Normal pleura.

(*c*) Normal bronchi.

(*d*) Acute bronchitis.

(*e*) Hay fever.

(*f*) Scars of operation of empyema which have been healed for one year or longer when the function of the lung is good.

(*g*) Acute pleurisy with effusion, provided the acceptance of the registrant shall be temporarily delayed for observation and reexamination and there is finally established evidence satisfactory to the examiners that the pleurisy and the effusion have entirely disappeared.

(*h*) Fracture of the rib or ribs, provided the acceptance of the registrant is temporarily deferred until a final examination shows recovery with or without deformity, and provided the deformity, if any, does not interfere with respiratory movements.

(*i*) Benign tumors of the breast or of the chest wall, provided the enlargement does not interfere with the wearing of a uniform or military equipment.

(*j*) Small, palpable lymph glands of the axilla which apparently do not interfere with the general health.

(*k*) Syphilitic periostitis of rib or ribs, sternum or clavicle.

105. Registrants who on examination are found to present the following remediable defects, and who are otherwise mentally and physically fit, are properly placed in Group B and should be returned to the jurisdiction of the local board:

(*a*) Typhoid periostitis of rib or ribs.

(*b*) Tumor of the breast or of the chest wall with such enlargement as to interfere with the wearing of a uniform or military equipment.

106. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Tuberculosis of the lungs.

(*b*) Tuberculous pleurisy.

(*c*) Unhealed sinuses of the chest wall following operation for empyema.

(*d*) Chronic bronchitis with emphysema.

(*e*) Chronic asthma associated with chronic bronchitis and emphysema.

(*f*) Fetid bronchitis.

(*g*) Bronchiectasis.

(*h*) Syphilis of the lung.

(*i*) Actinomycosis.

(*j*) Hydatid cysts.

(*k*) Restricted respiratory movements of chest due to deformity of the chest as a result of fracture of ribs or other injuries.

(*l*) Tuberculosis of the ribs.

(*m*) Cancer.

107. Inasmuch as pleurisy, with or without effusion, is a very frequent incidence of early tuberculosis, medical examiners should examine with the greatest care registrants who have apparently recovered from pleurisy.

108. The following information concerning methods of examination of the lungs and the interpretation of the findings are presented for the guidance of examiners:

109. The examiners should be extremely careful to reject registrants with manifest pulmonary tuberculosis for all military service, and to accept for military service registrants who allege tuberculosis as a ground for exemption or discharge on the basis of insufficient or incorrectly interpreted signs and symptoms.

Men who desire to serve their country may conceal, from patriotic motives, symptoms of tuberculosis which they know or suspect to exist. Some tuberculous patients will seek enlistment with a view to obtaining treatment and a pension. Some soldiers who have volunteered may repent their action and allege symptoms of tuberculosis with a view to securing discharge. Some registrants may be expected to claim the existence of tuberculosis as a ground for exemption, and may fortify their claims by certificates of physicians and by radiographs. Such certificates, etc., must not be accepted, but draft examiners must satisfy themselves as to the physical qualifications of registrants by their personal examinations. There will probably be many cases in which pulmonary tuberculosis will have been diagnosticated on the ground of subjective symptoms and of physical signs which are normal or indicate unimportant and healed lesions of some kind.

It is necessary, therefore, that conclusions of the examiner shall be based only on physical signs, sputum examinations, and radiographs. Statements of the subject as to symptoms will not be accepted as proof of the existence of tuberculosis unless supported by objective evidence.

It is the duty of examiners to protect the interests of the Government by preventing men from entering the service who have manifest tuberculosis. It is equally their duty to prevent the escape from service on the ground of tuberculosis of men who present slight or doubtful deviations from the normal. It is therefore necessary to insist that recommendations for discharge for tuberculosis of otherwise apparently healthy and vigorous men shall be based only upon the presence of definite and plainly marked signs of pulmonary lesions.

110. The following signs will not be regarded as evidence of pulmonary disease in the absence of other signs in the same portion of the lungs:

(*a*) Slightly harsh breathing, slightly prolonged expiration, over the right apex above the clavicle anteriorly and to the third dorsal vertebra posteriorly. The same signs at the extreme apex left side.

(*b*) Same signs second interspace right anteriorly near sternum (proximity of right main bronchus).

(*c*) Increased vocal resonance, slightly harsh breathing immediately below center of left clavicle.

(*d*) Fine crepitations over sternum heard when stethoscope touches the edge of that bone.

(*e*) Clicks heard during strong respiration or after cough in the vicinity of the sternocostal articulations.

(*f*) The so-called atelectatic râles at the apex during the first inspiration which follows a deeper breath than usual or a cough.

(*g*) Sounds resembling râles at base of lung (marginal sounds), especially marked in right axilla, limited to inspiration.

(*h*) Similar sounds heard at apex of heart on cough (lingula).

(*i*) Slightly prolonged expiration at left base posteriorly.

(*j*) Very slight harshness of respiratory sounds with prolonged expiration in the lower paravertebral regions of both lungs posteriorly, most marked at about angle of scapula, disappearing a short distance above that point, equal on both sides, or slightly more marked at the angle on one side, more frequently the left.

111. *The apices.*—The attention of examiners is particularly invited to the necessity of exercising great conservatism in their interpretation of physical signs over the apices. Interpretation of such signs as indicating active tuberculosis would in many cases do the Government great injustice, leading to the exclusion of men who are fit for service.

The only trustworthy sign of active apical tuberculosis is the presence of persistent moist râles.

112. *Indications from X-ray negative.*—The X-ray shows (1) tuberculous disease confined to region of hilus in deep lung; (2) extension upward toward apex or downward and outward toward base, confined to deep lung; (3) a fine line or two extending to apex with or without small focus of foci there—condition not determinable by physical signs; (4) clouding of apex without marked lines from hilus, probably largely pleuritic; (5) well-marked lines extending to superficies of apex, usually, but not necessarily, with foci there—lesion accessible to physical examination; (6) lines extending toward shoulder as well as apex—(*a*) if confined to deep lung may mean early and now healed exacerbation, (*b*) if extending to superficies denote larger lesion and less immunity than 5; (7) more or less widely diffused spots, lines, and streaks through a considerable portion of lower lobe approaching periphery of lung, with few or no auscultatory signs—deep peribronchial tuberculosis; (8) more extensive streaked opacities involving greater part of one or both lungs and extending to periphery with few or many physical signs—fibrocaseous tuberculosis, fibrosis preponderating in proportion to scantiness of more or less rounded spots or dots.

Conditions as shown by 1, 2, 3, 4, and 6 (*a*) are not causes for rejection. Cases under 5 are to be determined by physical examination. Cases under 6 (*b*), 7, and 8 are to be rejected.

SECTION XVIII.—HEART AND BLOOD VESSELS.

113. The following procedure should govern in the examination of the heart:

(*a*) Location and determination of character of apex impulse.

(*b*) Auscultation of the heart sounds over apex, lower sternum, and second and third interspaces to right and left of sternum, noting accentuation of sounds and murmurs.

(*c*) Inspection of root of neck and upper thorax and percussion of first interspace on each side of manubrium for evidence of aneurysm.

(*d*) Count of radial pulse, observation of its rhythm, and palpation of radial arteries for unusual thickening or high tension.

(*e*) Exercise test: Hopping 100 times on one foot. At close count heart rate with stethoscope over apex, listening for murmurs and noting how long tachycardia and unusual dyspnea persist. After two minutes neither should be marked. Examiners should use judgment and discretion in applying the exercise test to registrants who, in the preliminary examination, present evidence of incompetency of the heart. Registrants should not be placed in jeopardy, but at the same time the exercise test is an important factor in determining the condition of the heart.

114. Registrants who on examination show the following conditions, who are otherwise mentally and physically fit, shall be *unconditionally accepted* for general military service:

(*a*) Normal heart. (A heart shall be considered normal when the apex impulse is within the left nipple line and not below the fifth interspace, not heaving in character, with normal sounds, free from murmurs, absence of pulsation or dullness above the base of the heart, regular pulse of normal rate, no unusual thickening of the arteries or evidence of high blood pressure, and a normal response to the exercise test.)

(*b*) A pulse rate of 100 or over which is not persistent. (A pulse rate of 100 or over may be temporary and due to a recent infection, such as typhoid fever or local infections about the nose, mouth, and throat.)

(*c*) A pulse rate of 50 or under which is proved to be the natural pulse rate of the registrant or to be temporary or due to the use of drugs.

(*d*) Sinus irregularity. (This consists in a quickening of the pulse rate during inspiration and a slowing during expiration and is best recognized with the registrant recumbent and breathing deeply.)

(*e*) Old thrombophlebitis of one extremity unassociated with any evidence of persistence of the cause thereof or of obstruction in the involved vein or veins.

115. Registrants who on examination are found to present the following defects, if otherwise physically fit, may be accepted for *special and limited* military service, unless the degree of disability is obviously disqualifying:

(*a*) Intermittent claudication.

(*b*) Raynaud's disease.

116. Registrants who on examination are found to present the following defects shall be *unconditionally rejected* for all military service:

(*a*) Circulatory failure evidenced by definite symptoms such as a combination of breathlessness, marked cyanosis or edema.

(*b*) Hypertrophy and dilatation of the heart evidenced by displacement of the apex impulse to the left of the nipple line or below the sixth rib, and of a heaving or diffuse character.

(*c*) A persistent heart rate of 100 or over when this is proved to be persistent in the recumbent posture and on observation and reexamination over a sufficient period of time.

(*d*) A persistent pulse rate of 50 or under proved to be due to heart block.

(*e*) Complete irregularity of the pulse when this is found to be due to auricular fibrillation.

(*f*) Valvular disease, as evidenced by characteristic murmurs, enlargement of the heart, and a lack of the normal response to exercise.

(*g*) Arteriosclerosis and hypertension evidenced by a tense pulse, persistent systolic blood pressure above 160 m. m., accentuation of the aoritic second sound when the registrant is in quiet recumbency.

(*h*) Thrombophlebitis of one or more extremities if there is a persistence of the thrombus or any evidence of obstruction of circulation of the involved vein or veins.

(*i*) Aneurysm of the arch of the aorta or of any other large vessel.

117. It is incumbent upon medical examiners:

(*a*) To accept for service men with accidental murmurs or supposed defects which do not indicate disease and do not impair the individual's ability to undergo severe bodily exertion.

(*b*) To exclude from active service in the Army any registrant affected with disease of the heart or blood vessels which impairs his ability to undergo severe bodily exertion.

118. Men who desire to serve their country may from patriotic motives endeavor to conceal a known valvular lesion which has given no symptons. On the other hand, men drafted for service may allege or feign symptoms to obtain exemption. Registrants may be expected to present physicians' certificates to substantiate the existence of valvular disease. Many of these may be given in good faith because of inadequate knowledge of the significance of certain frequent murmurs. Such certificates will not be accepted, but draft examiners must satisfy themselves by their personal examinations as to the physical qualifications of registrants.

119. It is necessary, therefore, that the conclusions of the examiner shall be based on objective evidence in the widest sense, including both physical signs, cardiac rhythm, measurement of the blood pressure, and the observed effect of effort. Nevertheless, in the presence of questionable signs or symptoms, the history, especially of past rheumatic fever, may be a factor in the final decision. No statements of the subject, however, will be accepted as proof of the existence of a cardio-vascular defect, unless supported by objective evidence.

120. Since it is the duty of examiners to protect the interests of the Government by preventing men from entering the service whose circulatory systems may be expected to break down under strain, and equally by preventing the exemption or discharge of fit subjects because of unimportant deviations from the normal, it will be necessary for them to exercise every care in the interpretation of their findings and to bear in mind constantly the murmurs and other departures from the supposed normal which may occur in perfectly healthy hearts.

121. *Principles of interpretation of symptoms and signs referable to the heart.*—The following principles are laid down for the guidance of examiners in their interpretation of abnormal signs and symptoms: In many cases the interpretation must be purely individual and based on the cumulative evidence of a number of relatively slight deviations from the normal. It can not be too strongly insisted on that, given a heart of normal size and responding normally to effort, any murmur that is heard should be considered accidental and insignificant unless it can be positively demonstrated that it is a mitral or aortic diastolic murmur. It should also be constantly borne in mind that the excitement of the examination may produce violent and rapid heart action, often associated with a transient systolic murmur, which conditions may erroneously be attributed to the effects of exertion. They will usually disappear promptly in the recumbent posture, but the examiner must be shrewd to distinguish the excitable individuals and take measures to eliminate psychic influences from the test so far as possible.

122. *Hypertrophy and dilatation of the heart.*—Impulse to the left of the nipple line or below the sixth rib and of heaving character is cause for rejection. Its cause, either valvular disease or hypertension in the majority of cases, should be sought for. It should not be made a primary diagnosis unless careful examination fails to reveal a cause.

123. *Valvular diseases.*—Cardiac murmurs are the most certain physical signs by which valvular disease may be recognized and its location determined, but murmurs are very frequent in the absence of valvular lesions and may occur in perfectly healthy hearts, especially under the influence of excitement and exertion. Such accidental murmurs are always systolic in time. The most frequent of these are:

(*a*) Those heard at the apex on excitement, especially when recumbent.

(*b*) Those heard over the second and third left interspaces during expiration, disappearing during forced inspiration. These are particularly common in men with flexible chests, who can produce extreme forced expiration, and under such circumstances may be associated with definite thrill.

(*c*) Systolic accentuation of the respiratory murmur, especially on inspiration, heard near the apex or over the back.

Systolic murmurs as described in subparagraphs (*a*), (*b*), and (*c*) are not indicative of defects which shall disqualify a registrant for general military service.

Systolic murmurs unassociated with enlargement of the heart, alteration of the first sound, accentuation of the pulmonic second sound, or abnormal response to exercise may also be considered as without significance.

124. Other systolic murmurs:

(*a*) Loud systolic murmurs, audible at the apex and in the left back, if associated with any enlargement of the heart, with snapping first sound, or accentuation of the pulmonic second sound, constitute a disqualifying defect.

(*b*) Systolic murmurs at the base, except as specified above, especially those heard in the second right intercostal space, require more careful scrutiny. They may be due to disease of the aortic valves. In this case they should be harsh, conveyed well into the neck, associated with an aortic diastolic murmur, with thrill, or with a marked enfeeblement of the aortic second sound. They are more often due to dilatation of the aorta, either syphilitic or arteriosclerotic. The other signs of dilatation should then be sought—increased dullness in the first and second interspaces to either side of the manubrium, pulsation in this area, accentuation of the aortic second sound. In doubtful cases X-ray examination and Wassermann test should be made.

125. All diastolic murmurs, at apex or base, including presystolic murmurs, shall be considered evidence of valvular disease. The secondary signs should be sought for, viz, enlargement of one or both sides of the heart, alteration of the first or second sound, particularly a snapping first sound and accentuated pulmonic second sound in mitral disease, and the characteristic pulse of aortic insufficiency. In doubtful cases a definite history of rheumatic fever may be given weight. The exact diagnosis should be noted on the record.

126. It should be borne in mind that the characteristic presystolic murmur in certain cases of mitral stenosis may not be audible during rest. It is therefore important, in every doubtful case, that auscultation be made immediately after the exercise test and in both the erect and the recumbent positions. On the other hand, many cases of tachycardia or overacting heart present physical signs very suggestive of mitral stenosis (sharp, tapping apex beat, sharp, loud first sound, suggestion of apical thrill, etc.), and the diagnosis of mitral stenosis should not be made unless a distinct presystolic or diastolic murmur is heard.

Section XIX.—GENERAL.

127. Registrants who on examination are found to present the following condition who are otherwise mentally and physically fit shall be *unconditionally accepted* for general military service:

(*a*) Malaria, acute or chronic.

128. Registrants who on examination are found to present the following defects who are otherwise mentally and physically fit may be accepted for *special and limited* military service:

(*a*) Secondary anemia, due to hemorrhoids or any other remediable cause.
(*b*) Debility due to recent illness or to employment or environment in civil life.
(*c*) Hemophilia.

129. Registrants who on examination are found to suffer from the following defects shall be *unconditionally rejected* for all military service:

(*a*) Pellagra.
(*b*) Leukemia of all clinical types.
(*c*) Progressive pernicious anemia.
(*d*) Splenic anemia.
(*e*) Cancer.
(*f*) Tuberculosis.
(*g*) Irremediable metallic poisoning.

Section XX.—PURPOSELY CAUSED PHYSICAL DEFECTS.

130. Whenever it shall appear to a medical examiner that a registrant is suffering from self-inflicted or purposely caused physical defects which, under the Standards of Physical Examination, would render him disqualified for military service of any kind, a full statement of the facts and of the condition of the registrant and of the examiner's recommendation shall be prepared and submitted to The Adjutant General of the Army for a waiver of the physical defects, if recommended, so that the registrant may be compelled to render military service.

Section XXI.—NOTES ON MALINGERING.

131. Malingerers may be divided into three general groups: (*a*) Real malingerers with nothing the matter with them, who injure themselves, or make allegations respecting diseases or such conditions as drug taking, or who counterfeit disease with full consciousness and responsibility; all for the purpose of evading military service. Many of these have been coached.

(*b*) Psychoneurotics, who are natural complainers and try to get out of every disagreeable thing in life. Perhaps only partially conscious of the nature or the seriousness of what they do and only partly responsible. In many the motives are not persistent and many can be made into good soldiers.

(c) Confirmed psychoneurotics with long history of nervous breakdowns and illnesses who behave like class (a), but more persistently and from whom not much can be expected in the way of reconstruction.

132. The detection and management of *medical cases* depends upon the absence of positive findings in one who presents the general characteristics of the malingerer. There is especial need for the physical examination to be thorough in this group. Some of the cardiac cases at first regarded as malingerers were pronounced later by the cardiovascular board to have mitral stenosis, and similarly proper tests have shown the existence of gastric ulcer in cases which were under suspicion of fraud. The estimation of the reality of rheumatic pains is always a difficult matter.

133. *Surgical.*—Under this are included old scars and injuries of the bones, fractures, and orthopedic conditions.

NOTE.—For the detection of malingerers, in tests of vision and hearing, see paragraphs 16 to 23, inclusive, 28, and 29.

134. *Artificially created conditions.*—Men shoot or cut off their fingers or toes, practically always on the right side, to disqualify themselves for service. Sometimes they put their hands under cars for this purpose. Many men have their teeth pulled out. Retention of urine is simulated. Egg albumen is injected into the bladder or put in urine. Glucose is added to urine. Digitalis, thyroid gland preparations, and strophanthus are taken to cause disturbance of the heart and cantharides to cause albuminuria. The skin is irritated by various substances, which are also injected under it to create abscesses. Various substances are taken to bring about purging. An appearance of hemoptysis may be produced by adding blood, either human or that of animals, to the sputa. Sometimes merely coloring matter is added. Those who can vomit voluntarily what they swallow use the same means to create the appearance of hematemesis. Similarly, coloring matters may be added to the stools. Mechanical and chemical irritants are made use of to cause inflammation about practically all the body orifices. Jaundice may be simulated by taking picric acid. Crutches, spectacles, trusses, strappings, etc., are made use of to create the appearance of disability.

135. *Detection.*—Wounds are rarely self-inflicted when witnesses are present, consequently it is almost impossible to be certain of the motive behind these. Artificial jaundice is to be recognized by the demonstration of picric acid in the urine.

136. *Bed wetting.*—A frequent complaint among registrants for military service but not a cause for rejection.

137. The surest means of detecting malingering is a thorough understanding by the examiner of the types of people who actually do it—and the way they behave. It is only in the feigned diseases of the eye and ear that special tests are required. Observation in hospital is necessary in difficult cases. The vast bulk of malingerers are those who exaggerate some actual defect, and the problem for the medical examiner is to decide whether the defect complained of is sufficient cause for rejection for service. Persons of intelligence and education have more difficulty in deceiving, as they are bound to express themselves freely. If they are reticent in these matters they arouse suspicion by their reticence. Those who talk freely may be counted on to say things at variance with the existence of the disease of which they complain.

138. Whenever it shall appear to a medical examiner that a registrant is endeavoring to escape service by malingering, if otherwise mentally and physically fit, he shall be accepted. A full statement of the facts shall be prepared and forwarded to The Adjutant General of the Army.

NERVOUS AND MENTAL.

139. *Insanity.*—Rarely feigned by registrants and then of an extremely silly, foolish type. In cases of doubt, hospital observation is necessary with verified past records. Mental defects are frequently feigned, especially by illiterates. Organic diseases of the central nervous system can not be simulated.

140. *Pain and hyperesthesia.*—The most frequent of all complaints. History inconsistent, ordinary traces of suffering absent. Absence of other symptoms usually accompanying types of pain complained of. Absence of objective evidence of localized pains. Note behavior when the registrant believes himself unobserved.

141. *Anesthesia.*—Complaint of anesthesia itself creates a suspicion of malingering, as most patients with anesthesia are ignorant of it.

142. *Epilepsy.*—Men who have sustained head injury are very apt to claim fits. These complaints may be in reference to grand mal or petit mal. Petit mal attacks are spoken of as fainting attacks. In grand mal attacks there is loss of pupil response to light, knee jerks are lost, and the Babinsky reflex may be present.

143. *Hysteria.*—Not feigned in itself, but its existence creates confusion as to malingering. The question to be decided is whether the registrant is too seriously affected with the neurosis to be useful as a soldier. Often, even when the physical symptoms are most pronounced (paralysis), cure is still possible.

144. *Stiff backs.*—Stiff back is a frequent symptom of hysteria in the present mobilization among selected men. In cases of this kind organic disease of the vertebræ can and should be excluded, if necessary, by the X-ray.

1. Special Regulations No. 65, War Department (Standards of Physical Examination), revised November 8, 1918, and modified March 6, 1919, by letter A. G. O., No. 341.41, will govern the determination of physical standards of acceptance for voluntary enlistments, with the following exceptions:

Section XVI, paragraph 85, subparagraph (*e*), delete the words "(see paragraph 89)."

Section XVI, paragraph 89, entire paragraph revoked.

2. The question as to whether or not an applicant is of a suitable mental age for enlistment will be left to the judgment of the individual medical examiner.

3. Department commanders will publish these instructions to all concerned under their jurisdiction.

(*Cir. Letter from The Adjutant General, January 19, 1919.*)

SPECIAL REGULATIONS NO. 65a.

Instructions for the Preparation of Identification Record Cards.

A. Instructions primarily for the officer in general charge of the examinations.

1. An identification record card (Form 260, A. G. O.) will be made and forwarded directly to The Adjutant General of the Army in the case of every man who may hereafter enlist or reenlist in the Army.

2. When possible, the following order is strongly recommended for observance at the time of a complete physical examination:

(*a*) Take signature of soldier on the Identification Record Card.[1]

(*b*) Take right index finger print. (Signature impression.)

(*c*) Take remaining impressions.

(*d*) Make other examinations that can be made before stripping.

(*e*) After the soldier is stripped, record "Scars and marks" on the outline-figure part of the card.

(*f*) Complete the physical examination.

(*g*) Complete filling out papers, including brief on Identification Record Card.

3. The following apparatus is to be provided for each team engaged in finger printing:

(*a*) A table, the top of which is 40 inches above the floor, free from obstructions, so that the subject can stand close to it. The under front edge of the table top to be beveled back so that the upper front edge is fairly sharp.

(*b*) A tube of printer's black ink (heavy grade).

(*c*) A form holder.

(*d*) An ink plate of smooth metal or plate glass.

(*e*) A small printer's roller, known as a brayer, for distributing the ink on the plate. The roller may be improvised by stretching a section of smooth garden hose over a round stick 4 inches long and providing a suitable handle.

(*f*) Pen, ink, and blotter for each operator.

(*g*) A basin of alcohol, turpentine, or kerosene, and a cloth, to cleanse and dry the fingers *before* the impressions are taken.

(*h*) A second basin of alcohol, turpentine, or kerosene, and a cloth, with which the subject may cleanse his fingers *after* the impressions are taken.

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[1] The reason why the signature of the soldier is to be written immediately before taking the "rolled print" of right index finger is to establish an absolute connection between the written signature and the signature impression and thus to prevent one person from substituting his finger impressions for those of another.

4. To each operator who takes finger prints is to be assigned an individual number, and that number is to be placed on each Identification Record Card made by him after the word "By" on the brief fold of the record.

5. A copy of these instructions is to be given to every operator, and he should be held accountable for a knowledge of its contents.

B. Instructions primarily for men who are charged with taking the finger impressions.

6. The person who takes the finger prints should see that the roller and ink plate are kept clean and free from dust, grit, or hairs, and the ink tube is kept closed when not in use. The ink should be cleaned from the plate and roller by means of a cloth wet with turpentine or gasoline when the day's work with them is finished. When the roller is not in daily use it should be rubbed with a little sweet oil or lubricating oil before it is laid away. This will prevent the composition from becoming hard.

7. The Record Card is to be placed on the table in such fashion that it is bent backward under the bevel of the table on the upper "fold on this line" so as to be out of the way of the knuckles while making the rolled impressions of the fingers of the right hand. When the left-hand fingers are to be rolled the card is to be folded in a like manner on the lower "fold on this line." The card is to be held in place by means of the form holder or a paper weight.

8. Preparatory to taking the finger prints of a subject, a *small* quantity of ink should be squeezed from the tube and carefully distributed by use of the roller into a thin, even film on the plate. If too much ink is used, the impression will be blurred (the grooves between ridges filled with ink) and consequently unsatisfactory. The quantity of ink that will produce the best result, and the most satisfactory method of distributing it on the plate, as well as the amount of pressure necessary to ink the fingers properly and to make the record impression, can be determined by each operator from a few preliminary experiments. It is suggested, therefore, that before the operator attempts to take record impressions he experiment on a sheet of plain paper, with a surface similar to that of the record blank, until he is able to take impressions that are clear and satisfactory.

9. It is absolutely necessary that the finger prints shall be clear, that the ridges shall be distinctly outlined, and that the "rolled" impression shall be sufficiently large to include *the whole of the pattern of each finger*. (See par. 19.)

10. Care should be taken to see that the bulbs of the fingers of the subject are clean and *dry* before attempting to take impressions of them, otherwise they will give unsatisfactory results. They should be first dipped in alcohol, turpentine, or kerosene (perferably alcohol, which may be denaturized), and wiped dry.

11. In taking impressions the operator himself should manipulate the hands of the subject, who should be directed to relax the fingers and not to attempt to assist by adding to the pressure on the inked plate or on the paper. In order that the ink may be taken up on the finger evenly and in sufficient quantity, an unused part of the plate should be selected each time for inking the finger, and when no unused part of the plate can be found readily the ink should be redistributed with the roller or the plate reinked.

12. There are two kinds of impressions, "plain" and "rolled." A plain impression is obtained by pressing the bulb of the finger, with the plane of the nail parallel to the plane of the plate, on the inked plate and then on the paper in the same manner. A rolled impression is obtained by placing the side of the finger on the inked plate, with the plane of the nail at right angles to the plane of the plate, and rolling the finger over from one side to the other until the plane of the nail is again at right angles to the plane of the plate but with the bulb surface of the finger facing in the opposite direction, thus inking the surface of the finger, and then rolling the finger over the paper *once* in the same manner, in this way obtaining a clear impression of the ridges on the surface of the finger. The rolled impression should include both the palmar surface and sides of the finger between the tip and the flexure of the last joint, and only that much of the finger should be inked. This for the reason stated in paragraph 18.

13. Immediately after the signature of the soldier is written a rolled print of the right index finger is to be recorded in the space set aside for that purpose. "Tip of finger this end" means that when the signature impression is made the end of the finger should be *toward* that end of the space. If the right index finger is missing or so deformed that no impression can be obtained from it, an impression of the right middle finger is to be substituted. If that finger also is missing, substitute an impression of the right thumb.

14. Take the rolled impressions, in the order named and in the proper spaces on the form, of the thumb, index, middle, ring, and little fingers of the right hand. The impressions should be located on the form so that the flexure of the last joint is immediately above the folding line but not so low that the black folding line obscures the ridges. This will leave room for a second print to be taken in the upper part of the space in case the first print is defective.

15. If any finger is missing, or is so injured or deformed that an impression can not be obtained, the space for that finger should be left blank and a note made on the outline figure of the nature of the defect. But if any portion of the distal phalanx is present ink and record that portion.

16. After the impressions of the fingers of the right hand have been taken, shift the form in the form holder until the lower "fold on this line" appears just above the edge of the holder. Then take the rolled impressions of the fingers of the left hand in the proper spaces on the form.

17. After the rolled impressions of each finger of both hands have been obtained, again move up the form in the holder until the lower edge of the form is in place. Then take a plain impression of the terminal phalanges of all the fingers of the right hand at one time, the fingers being held together so as to bring the prints within the allotted space, and a similar plain impression of the terminal phalanges of the fingers of the left hand. Hold hands low enough to show all of the pattern on the ball of the fingers. Great care is to be taken to secure a clear impression of the core of the pattern of all fingers.

WHORL

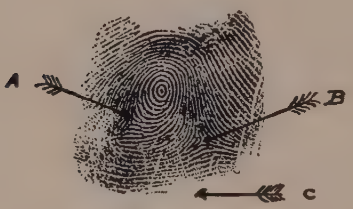


Fig. 1

LOOP.

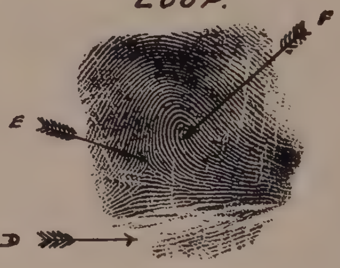


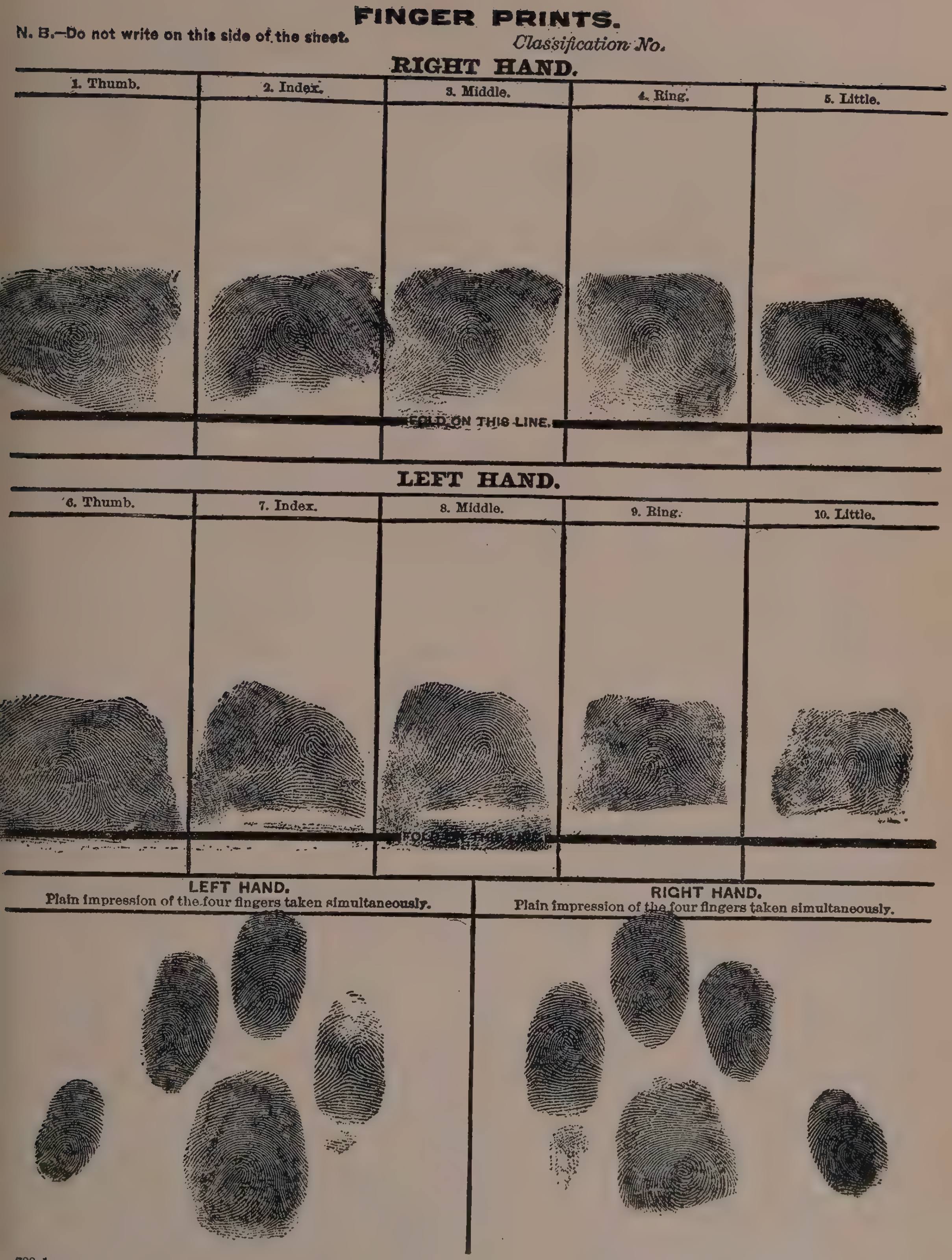
Fig. 2.

18. An impression of the two thumbs, taken *simultaneously*, is to be made just below those of the finger impression, or close to the line separating the two hands. For this reason the last joints of the fingers only are to be inked, as directed in paragraph 12, otherwise the patterns in the two thumbs will be obscured by the impressions of those parts of the fingers that should not have been inked.

19. When the finger-print side of the form has been completed, the impressions should be inspected to make sure that they are clear and that the rolled impressions include the whole of the pattern. To understand what is meant by the "whole of the pattern" see figures 1 and 2 below.

Fig. 1 is a whorl, and Fig. 2 is a loop. A whorl has never less than two deltas (A and B). A loop has one delta (E). F is the core. A whorl to be complete *must show both deltas, and the lines running below* the core around *from one delta to the other* (as shown by the direction of the arrows), as they have to be traced. The impression of a loop must show the core and the delta, and *all lines between the two.* If these are not clear the record can not be definitely classified and is valueless. If the fingers are not rolled close enough to the flexure of the joint (C and D), the lines between the deltas A and B in the whorl may be absent.

Fig. 1 is a whorl, and Fig. 2 is a loop. A whorl has never less than two deltas (A and B). A loop has one delta (E). F is the core. A whorl to be complete *must show both deltas, and the lines running below* the core around *from one delta to the other* (as shown by the direction of the arrows), as they have to be traced. The impression of a loop must show the core and the delta, and *all lines between the two.* If these are not clear the record can not be definitely classified and is valueless. If the fingers are not rolled close enough to the flexure of the joint (C and D), the lines between the deltas A and B in the whorl may be absent.



FINGER PRINTS.

N. B.—Do not write on this side of the sheet.

Classification No.

RIGHT HAND.

1. Thumb.	2. Index.	3. Middle.	4. Ring.	5. Little.

FOLD ON THIS LINE.

LEFT HAND.

6. Thumb.	7. Index.	8. Middle.	9. Ring.	10. Little.

FOLD ON THIS LINE.

LEFT HAND. Plain impression of the four fingers taken simultaneously.	RIGHT HAND. Plain impression of the four fingers taken simultaneously.

728–1.

IDENTIFICATION RECORD CARD.

Doe (Surname.) John R. (Christian name.)

Army serial number 632491

*Regular Army. *~~National Army~~.

*~~Regular Army Reserve~~. *~~Enlisted Reserve Corps~~.

*~~National Guard, State of~~

Enlisted July 1, 1918

At Washington Bks, D.C.

Date of last prior enlistment: Dec. 31, 1912

White*—~~Colored~~*. *Height* 67½ *inches.*

Age 25 *years,* 7 *months.*

Finger prints taken Jan. 1, 1917

At Washington Bks, D.C.

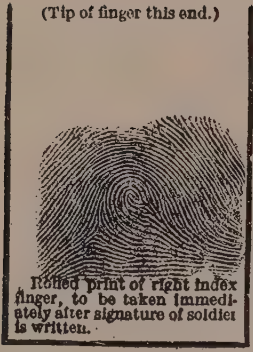
By Richard Roe

Capt. and Asst. Surg. U.S.A.

*Strike out words not applicable.

When completed this form will be forwarded directly to The Adjutant General of the Army.

(Tip of finger this end.)



Rolled print of right index finger, to be taken immediately after signature of soldier is written.

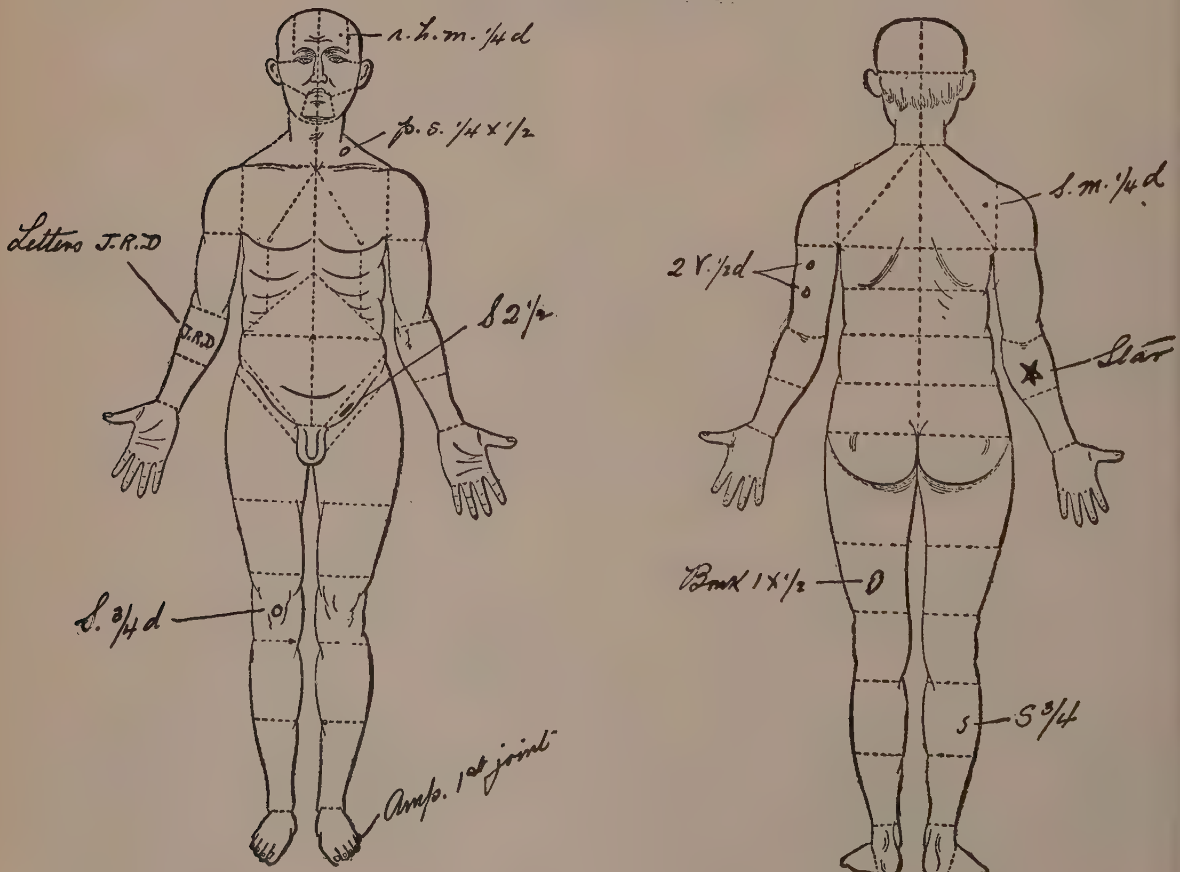
Signature of soldier:

John R. Doe

Form No. 260, A. G. O.
Ed. Aug. 25-17—2,000,000

8—985

SCARS AND MARKS.



728-2.

20. The rolled impressions should also be compared with the plain impressions for the purpose of ascertaining whether they are recorded in proper sequence. Any defective impressions can then be remedied by taking another print in the upper part of the proper space, or by using a new form. If the impressions are not recorded in proper sequence a new form should be used, the old one being destroyed.

21. The systematic method of comparing a finger-print record is as follows: Fold the brief fold inward—the side of the form headed "Finger prints" is the inside—so that the signature impression comes directly under the rolled impression of the finger numbered 2, and compare one with the other. If they agree, the inside of the form is connected with the outside. The *rolled* impression of the right index finger is then to be compared with the *plain* impression of the right index finger; the middle *rolled* with the middle *plain;* the ring *rolled* with the ring *plain;* and the little *rolled* with little *plain.* The same comparison is then made with the fingers of the left hand, and, if all are found to agree and are clear and complete, the record is considered satisfactory.

22. Make the best record possible of bad hands and forward as usual, but clip a memorandum slip to it saying that the record of "John H. Smith" (or whatever the name may be) is not considered satisfactory and another record will be made 10 days later and forwarded.

23. Blurred impressions are caused either by a movement of the finger while being rolled or impressed, too much ink, or most likely by the fingers being wet or damp when inked. Such records should not be forwarded, but new ones made at once to take their place. If not enough ink is used the record is too dim to be deciphered. If too much ink is used, ridges are buried in ink and can not be seen. The desired quality of impression is shown in figures 1 and 2.

24. If the record, after examination, is considered complete and satisfactory the operator will place his number immediately after the word "By" on the brief.

25. Before making the entries on the outline-figure side of the blank, the ink on the finger-print side should be allowed to become sufficiently dry to prevent blurring by rubbing. A few minutes will be sufficient if the form is handled carefully and not rubbed about on the desk while the personal description is being entered. A sheet of blotting paper placed under the form will protect it to some extent. If an impression becomes blurred at any time a new impression should be taken in the upper part of the proper space, or, if necessary, the imperfect form should be destroyed and a new record made.

C. Instructions for recorders of scars and marks.

26. The following abbreviations are authorized for use on the chart of "Scars and marks."

Amp.=Amputation.
Blk. =Black.
Bmk.=Birthmark.
Bro. =Brown.
d. =Depressed, except when following a dimension; then it stands for diameter.
f. =Flat
fl. =Fleshy.
h. =Hairy.
m. =Mole.
p. =Pitted.
p. m.=Pinhead mole.
r. =Raised.
s. =Scar or smooth
v. =Vaccination.
Var. =Varicose veins or varicocele.
w. =Wart.

27. All combinations of these abbreviations are admissible, e. g., p. s. $\frac{1}{2}$d.=pitted scar one-half inch in diameter; r. h. m. $\frac{1}{4}$d.=raised hairy mole one-quarter inch in diameter; s. 1″=scar one inch long; f. p. s. $1\times\frac{1}{2}$=an oval, flat, pitted scar one inch long and one-half inch wide.

28. Abbreviations denoting shape are unnecessary, for the letter "d," following a dimension, shows that the mark is circular; two dimensions given indicate that the mark is oval or oblong, and when no letter follows the dimension it is understood that the scar or mark is linear.

ADDITIONAL INSTRUCTIONS.

29. The signature of the responsible officer will be added to each record.

30. The completed form, folded on the lines marked "fold on this line," with the *brief fold outside and the rolled impressions of the fingers of the right hand inside*, should be mailed promptly in an ordinary penalty envelope, without letter of transmittal, to The Adjutant General of the Army.

31. In the brief, the name should be written as directed on the form—surname first, Christian name, and middle initial if any—thus: Smith, John J. The signature in this case should be written the usual way, i. e., John J. Smith. As so many records are received with the briefed name

different, either altogether or in spelling, from that of the signature, the utmost care is enjoined to see that the man who signs the record is the person whose name appears in the brief. These names should be compared in *every* case.

32. Whenever practicable, the name of the soldier is to be typewritten. If not practicable, it must be printed in plain GOTHIC letters.

33. The branch of service is to be indicated by crossing out the words not applicable; as shown on model card.

34. The latest edition of Form No. 260, A. G. O., should be used whenever practicable; but should any other edition of this form be used and should the soldier enlist for a branch of service not provided for thereon, the branch of service for which he enlisted may be written or stamped above the words "Identification Record Card" at the top of the brief, crossing out the other branches that are not applicable.

35. The "date of enlistment" of a soldier of the National Army is the date specified in the notice of the local board or of the adjutant general of the State for the man to report to the local board or at a designated place for military duty. This date marks the induction of the man into the military service of the United States, whether he actually reports in person for military duty or not. "The 'place of enlistment' of a soldier of the National Army is the place specified in the notice of the local board or of the adjutant general of the State for him to report for military duty." (*War Dept. G. O. No. 115, 1917.*)

36. If the soldier had prior service in any branch of the service, write "Army," or "Navy," or "Marine Corps," as the case may be, immediately after the word "enlistment," and give the date of that enlistment on the line provided for that purpose.

37. It is *very* essential in *every* case that the race be given, and as the *race* and *branch of service* furnish primary divisions for the records in this office, if it is not complete in *both* of these respects, *the record must be returned for completion.*

38. Give height in *inches.*

39. Age is to be given in *years* and *months.*

40. If a record is returned because the note under the signature impression was not complied with, the addition of the signature or signature impression *now* will not suffice; a complete new record is to be made and forwarded, because the note, since it was not complied with *at the time the record was made*, has lost its efficacy.

41. When records are returned for correction and the soldier has been sent elsewhere, the communication requesting the correction and the records are to be forwarded direct to his present station for completion.

42. The skin on the finger tips of the bodies of men which have been recovered from the water may be greatly wrinkled or shriveled, so that without some treatment the making of satisfactory prints might be difficult and even impossible. The way to overcome this is to inject water with a hypodermic syringe beneath the skin of the bulb of the finger. This will smooth out the skin for the impression.

43. In making rolled impressions of the fingers of the right hand it will be found that better results can be obtained by rolling those fingers from the left over toward the right, or, in other words, rolling from a strained position of the hand to an easy one. The fingers of the left hand should be rolled from the right over toward the left. If the rolling of a finger ends in a strained position, lifting the finger from the paper is liable to blur the impression just made.

44. Pending receipt of the new edition of this form, the soldier's Army serial number will be written in the center of the card immediately above the words "Identification Record Card."

SPECIAL REGULATIONS NO. 65c, 1919.

Physical Examination for Flying.

SECTION I.—GENERAL INSTRUCTIONS AND DISPOSITION OF RECORDS OF EXAMINATIONS.

1. Physical examinations for flying will be made only by such medical officers as are authorized in writing by the Surgeon General of the Army to conduct such examinations and will be conducted as prescribed in these regulations. Officers making physical examinations will under no circumstances waive physical defects.

2. All applicants for heavier or lighter than air flying training will be subjected to a rigid physical examination and will not be allowed to proceed with their flying training until an

approved copy of Form No. 609, A. G. O., in each case has been received back at the station of the applicant.

3. A record of the examination, in triplicate, will be made on Form No. 609, A. G. O. Two copies will be forwarded directly to the office of the Director of Air Service, attention chief surgeon, Air Service, and the third copy retained by the flight surgeon at the station of the candidate. Upon receipt of the two copies of Form No. 609, A. G. O., they will be approved or disapproved by the chief surgeon, Air Service, one copy retained for permanent file, and one copy returned to the station from which received.

4. Upon receipt back at the station of the copy of Form No. 609, A. G. O., the action of the chief surgeon, Air Service, contained thereon will be transcribed to the retained copy of the form and the same certified as a "true copy."

5. Whenever an individual is transferred to another station, the copy of Form No. 609, A. G. O., with the action certified thereon, as provided in paragraph 3 above, will be forwarded to the flight surgeon of the new station. The other copy of Form No. 609, A. G. O., will be retained at the station for permanent file.

6. No rating for flying status will be given until the report of the board of officers received in the office of the Director of Air Service has been furnished the chief surgeon, and same has been received back from the chief surgeon with a statement to the effect that the candidate is considered physically qualified for the rating recommended. A copy of the statement will be filed with the report of the board of officers on the candidate under consideration.

7. Reexaminations will be required from time to time, as deemed expedient by the Director of Air Service, or as considered necessary by commanding officers, to determine the physical fitness of anyone to continue on flying training or duty. Commanding officers are authorized, upon recommendation of the flight surgeon, to suspend the flying training of, or to relieve from flying duty, any individual considered physically incapacitated, and to authorize the resumption of such training when the individual is found physically fit. Whenever such incapacity is not the result of a disability incurred as a result of participation in aerial flights, the individual will be relieved from flying status until the disability is removed.

8. Commanding officers of Air Service stations will require the flight surgeon, or the post surgeon in the absence of the former, to investigate the physical examination records of all commissioned and enlisted personnel engaged in flying or under flying instruction, in January and July of each year.

9. A report of this investigation covering the flying personnel, for all personnel for whom reports have not been submitted, giving name, rank, and organization and whether qualified or disqualified for flying, as shown by the record on Form No. 609, A. G. O., will be forwarded through the commanding officer to the Director of Air Service, attention chief surgeon, Air Service. If the record on Form No. 609, A. G. O., is not found, or is incomplete in any case, these facts will also be reported.

10. In cases where the physical examination record is incomplete, unsatisfactory, or missing, the commanding officer will immediately direct discontinuance in flying until the physical qualifications have been properly determined, recorded, and certified, as required in these regulations.

SECTION II.—EXAMINATION.

EYE.

11. *Visual acuity.*—(*a*) Apparatus and set-up: Five Snellen test charts, each with a different arrangement of letters; a blank card about 6 by 9 cm. Four of the test charts are partially covered by black paper, leaving exposed only the 20 feet and successive smaller rows of letters. One chart is left fully exposed. The five charts are arranged in close formation against a neutral colored wall at the end of the examination room and each one numbered. These numerals must be distinctly visible at a distance of 20 feet. Two 100-watt daylight Mazda lamps with reflectors are installed about 4 feet above and in front of the test charts to provide uniform illumination. A single 200-watt daylight Mazda lamp in a suitable reflector may be substituted for the above. The switches controlling these lamps and the spot light used with the phorometer-trial frame should be located on the side wall where they can be reached easily by the examiner as he stands beside the applicant's chair. All windows and other sources of light located in front and to the side of the applicant are shaded during the examination.

(*b*) Procedure: Immediately upon entering the room, the applicant occupies a chair facing the test charts 20 feet away. The test is begun promptly to prevent study of the letters. The examiner stands at one side of the applicant, using the 6 by 9 cm. card to cover the left eye while the right is being tested. Designating one of the partly exposed charts by number, the examiner instructs the applicant to read as many letters as possible. When the best vision for the right eye has been obtained, the card is shifted to cover the right eye and the left eye is tested on one of the other partially exposed charts. The fully exposed chart is used only when vision is less than 20/20. The row of smallest letters read correctly, determines the fraction used in recording visual acuity. The number of smaller letters read in the next line is added to this fraction following the plus sign, e. g., 20/20+5.

(*c*) Precautions: Every possible safeguard is thrown around the test to prevent memorizing the charts. Applicants awaiting their visual acuity test are not permitted to remain in the room within sight of the test letters nor where they can hear them read aloud.

Each eye is completely screened from the letters while the other is being tested. The use of the hand or of an opaque disk from the trial case as a screen does not insure a monocular test.

(*d*) Interpretation of findings: The minimal visional requirement for each eye is 20/20. If two or three letters are not read in the 20/20 line they may be offset by an equal number of letters read in the 20/15 line.

12. *Depth perception at 6 meters.*—(*a*) Apparatus: Directions for the construction of this simple apparatus accompany the ophthalmological equipment. It is placed permanently against the wall beneath the Snellen test charts, where it will receive the overhead illumination.

(*b*) Procedure: The rods in the box are widely separated by the examiner and the applicant instructed to manipulate the two cords so as to bring the movable rod beside the fixed one in a position where both rods appear to be the same distance from him. The test is repeated several times, the rods being widely separated before each trial. The applicant's estimation of depth difference is read in millimeters directly from the scale and entered on the record.

(*c*) Precautions: All information concerning the results of the successive trials is denied the applicant before the test is completed.

(*d*) Interpretation of findings: An average depth difference of more than 30 mm. disqualifies the applicant.

13. *The Maddox rod screen test at 6 meters.*—(*a*) Apparatus: A phorometer-trial frame equipped with a pair of multiple Maddox rods and a pair of Risley rotary prisms; a blank card about 6 by 9 cm., which serves as a screen; a spot light about 1 cm. in diameter.

(*b*) Procedure: Before beginning the test the applicant's sighting or fixing eye is determined. For this purpose a blank card about 13 by 20 cm. with a 3 cm. round hole in the center is employed. The applicant seated, facing the spot light 6 meters away, grasps the card by the short sides with both hands. While looking intently at the light, he slowly raises the card at arm's length and locates the light through the hole without closing either eye. Only one eye can see the light through the hole, and the eye selected for this purpose is the one used habitually for sighting or fixing.

Having determined the sighting eye, the phorometer-trial frame is adjusted closely in front of the applicant's eyes. One of the multiple Maddox rods is swung into position before the nonfixing eye. A rotary prism is placed before the same eye. The sighting or fixing eye must have an unobstructed view of the spotlight. For the measurement of esophoria or exophoria, the Maddox rod is adjusted to give a vertical line of light. The rotary prism is adjusted for the measurement of lateral deviation and set 4 or 5 prism diopters off the zero mark. This gives enough deflection at the first reading to detect an applicant who has been coached to say the line passes through the light.

The 6 by 9 cm. card is moved from one eye to the other a few times to ascertain if the applicant sees both the line and the light. If the line is not seen readily, the Maddox rod is readjusted by centering it carefully in front of the pupil. Some further darkening of the room may be necessary to render it clearly visible.

When the applicant sees both the line and the light easily, the examiner holds the card or screen in front of the nonfixing eye to shut out the image of the line. The applicant now sees only the light. After he has fixed it for several seconds, the screen is removed for an instant and quickly replaced. In that brief interval the applicant should see the line and be able to locate it with reference to the light. After one or two such exposures he will say that the line is to the right or left of the light or possibly through it. He is instructed to grasp the milled head that rotates the prism and turn it to bring the line directly into the light. To enable him to do this, the screen is removed from the eye at intervals and quickly replaced. Finally the applicant will have rotated the prism enough to cause the line to pass through the light every time he sees it when the screen is removed. The number of prism diopters necessary to do this is read from the scale of the rotary prism. This is entered on the record as esophoria if the prism is base out, and exophoria if the prism is base in. For the measurement of hyperphoria, the Maddox rod before the nonfixing eye is readjusted to give a horizontal line of light. The rotary prism is also readjusted to measure vertical deviation. The screen is used exactly as before to give an occasional glimpse of the line. The number of prism diopters read from the scale is recorded as right hyperphoria if the prism is base down before the right eye or base up before the left. It is recorded as left hyperphoria if the prism is base up before the right eye or base down before the left.

(*c*) Precautions: The phorometer attachment is not used for measuring the amount of heterophoria. The Maddox rod and the measuring prism are not used before the fixing eye. The test gives an inaccurate result if the applicant is permitted to see the line for a longer time than is allowed by the momentary exposure described above.

(*d*) Interpretation of findings: Esophoria of more than 4△ is a disqualifying factor if associated with less than 4△ of prism divergence, or if associated with diplopia in the lateral positions on the tangent curtain, or if associated with an amount of accommodation near the lower limits, or if associated with an amount of hyperopia near the disqualifying limit.

Exophoria of more than 2△ is a disqualifying factor if associated with an angle of convergence near the disqualifying limit, or if associated with diplopia in the lateral positions on the tangent curtain.

Hyperphoria of more than ½△ disqualifies the applicant without further supporting evidence.

14. *The Maddox rod screen test at 33 cm.*—(*a*) Apparatus: Phorometer-trial frame; small light from electric ophthalmoscope.

(*b*) Procedure: The light is held in the median line 33 cm. from the eyes. The test proceeds exactly as described for 6 meters, but is not made for hyperphoria.

(*c*) Precautions: Same as for the 6-meter test.

(*d*) Interpretation of findings: Exophoria of 4△ may be considered the normal condition. Any considerable variation from this condition is to be interpreted in connection with the other associated tests.

15. *Prism divergence.*—(*a*) Apparatus: Phorometer-trial frame; spot light 1 cm. in diameter.

(*b*) Procedure: The applicant is seated facing the spot light 20 feet away. The rotary prism of the phorometer-trial frame is adjusted before one eye so that by turning the milled head the prism will be acting base in. With the prism set at zero on the scale, the applicant should see but one spot of light. As the prism is slowly rotated base in, diplopia will be produced. The number of prism diopters which causes the onset of diplopia is read from the scale and entered on the record as prism divergence.

(*c*) Precautions: The test can not be made if the applicant has diplopia when the prism is set at zero on the scale.

(*d*) Interpretation of findings: Prism divergence of more than 9△ disqualifies the applicant if associated with an angle of convergence near the disqualifying limit. If less than 4△ of prism divergence is found associated with more than 4△ of esophoria at 6 meters, the applicant is disqualified.

16. *Test of associated parallel movements.*—(*a*) Apparatus: A pin with a white head 2 mm. in diameter.

(*b*) Procedure: The applicant stands near a window where good illumination falls on both eyes. The examiner holds the white-headed pin about 33 cm. directly in front of the applicant's eyes and directs him to look at it steadily. Nystagmus in the primary position is to be noted at this stage of the test. The applicant is then instructed to hold his head still and watch the pin as it is moved slowly to his right. The pin is not carried beyond the field of binocular fixation, but is held motionless for a moment near the lateral limit of the field. Each eye is inspected to discover any failure in fixing the pin. The lagging or overaction of either eye is noted. The pin is then carried slowly to the extreme left, up and to the left, up and to the right, down and to the right, down and to the left. The lagging of either eye in any of these six cardinal directions is due to underaction of at least one of the extrinsic ocular muscles. It may indicate a paresis or a complete paralysis. This underaction is recorded by stating which eye lags and in which direction the lagging is observed. In the same way any overshooting of either eye is recorded by stating which eye is involved and in which direction.

If any underaction or overaction is revealed by this test, the final diagnosis is made or verified on the tangent curtain by means of a small electric light or candle and a red glass. From the associated parallel movement test and the plotting of diplopia on the tangent curtain, a diagnosis of the individual muscle or muscles involved is readily made.

(*c*) Interpretation of findings: The applicant is disqualified if the underaction or overaction of any of the extrinsic ocular muscles produces diplopia except in the extreme positions, where a small separation of the images may be disregarded. Nystagmus disqualifies if it is demonstrated except in extreme positions.

17. *Inspection of the eyes.*—(*a*) Procedure: Whenever possible the eyes are inspected by bright daylight. Every pathologic condition and congenital anomaly is recorded. The following conditions are commonly found:

Lids: Ptosis, blepharitis, trichiasis, entropion, ectropion, and chalazion.
Tear sac: Imperfect drainage.
Lower punctum: Failure of contact with bulbar conjunctiva.
Conjunctiva: Trachoma, and old scars.
Cornea: Scars, pannus, and pterygium.
Pupils: Unequal size, irregular shape, and failure to react to light or accommodation.

(*b*) Interpretation of findings: Any pathologic condition which may become worse or interfere with the proper functioning of the eyes under the fatigue and exposure of flying disqualifies the applicant.

18. *Accommodation.*—(*a*) Apparatus: The Prince rule; a small millimeter rule; a card with several rows of small letters.

(*b*) Procedure: Accommodation is measured from the anterior focus of the eye which is about 11.5 mm. in front of the cornea. Using the millimeter rule, a pencil mark is made on each side of the applicant's nose 11.5 mm. in front of the right and the left cornea, respectively. In measuring the accommodation of the right eye, the flat side of the Prince rule is laid against the right side of the applicant's nose, with the end of the rule at the pencil mark. The rule is held horizontally and extends directly to the front. The card of test letters is held not more than 5 cm. in front of the applicant's right eye. His left is screened from sight of the letters by the flat side of the rule. The card of test letters is now carried slowly away from the eye and the applicant instructed to begin reading the letters aloud as soon as they become legible. The card is halted the instant he begins to read the letters correctly and the point on the rule opposite the card is read off in diopters. This is the measure of accommodation of the right eye. To test the left eye the rule is changed to the left side of the nose and the above procedure repeated, using a different line of letters.

(*c*) Precautions: The letters on the test card are read aloud. The same line of letters is not used for testing both eyes. The card is held close to the eye and carried away from it.

(*d*) Interpretation of findings: The appended table gives the mean values of accommodation in diopters from 18 to 50 years of age. Accommodation is normal if it lies between limits 2 diopters above and below the mean for the applicant's age.

Table of mean values of accommodation power (Duane).

Age.	Diopters.	Age.	Diopters.	Age.	Diopters.	Age.	Diopters.
18	11.9	25	10.2	31	8.6	37	6.8
19	11.7	26	9.9	32	8.3	38	6.5
20	11.5	27	9.6	33	8.0	39	6.2
21	11.2	28	9.4	34	7.7	40	5.9
22	10.9	29	9.2	35	7.3	45	3.7
23	10.6	30	8.9	36	7.1	50	2.0
24	10.4						

19. *Angle of convergence.*—(*a*) Near point of convergence (PcB).—

(1) Apparatus: The Prince rule; a pin with a white head 2 mm. in diameter.

(2) Procedure: The distance to this point is computed from the base line connecting the centers of rotation of the eyes.

The end of the Prince rule is placed at the mark on the right side of the nose, 11.5 mm. in front of the cornea. The white-headed pin is held 33 cm. away in the median line above the edge of the rule and the applicant is instructed to look at it intently. If both eyes are seen to converge upon the pin, it is then carried in the median line, along the edge of the rule, toward the root of the nose. The applicant's eyes are carefully watched and the instant one is observed to swing outward the limit of convergence has been reached. The point on the rule opposite the pin is then read in millimeters. This test is repeated until a fairly constant reading is obtained. To this reading 25 mm. is added, which will give approximately the distance from the near point of convergence to the base line.

(3) Precautions: Both eyes must converge upon the pin at the start of the test. The applicant's observation of the onset of diplopia is not relied upon to determine the near point.

(4) Interpretation of findings: The near point of convergence, unlike the near point of accommodation, varies little with age. Its measurement is of value only in computing the angle of convergence. Applicants are not qualified or disqualified on this measurement, but on the angle of convergence.

(*b*) *Interpupillary distance* (*Pd*).—

(1) Apparatus: A small millimeter rule.

(2) Procedure: The examiner stands with his back to the light, face to face with the applicant. The rule is held in the examiner's right hand and laid across the applicant's nose in line with his pupils as close to the two eyes as possible. The examiner closes his right eye and instructs the applicant to fix his eyes on the open left eye. With the eyes in this position the zero mark on the rule is placed in line with the nasal border of the applicant's right pupil. The rule must be held steadily in this position while the examiner opens his right eye and closes his left. The applicant is then instructed to look at the open right eye. The point on the rule in line with the temporal border of the applicant's left pupil is read in millimeters as the interpupillary distance.

(*c*) *Computing the angle of convergence.*—

(1) Procedure: The following formula is used for computing the angle of convergence:

$$\text{Angle of convergence} = \frac{Pd \times 100}{PcB} + 3$$

(2) Interpretation of findings: An angle of convergence smaller than 35° disqualifies the applicant.

20. *Retinal sensitivity.*—Until a suitable apparatus for measuring retinal sensitivity has been approved, the test is omitted.

21. *Central color vision.*—(*a*) Apparatus: The Jennings self-recording test for color blindness.

(*b*) Procedure: Central color vision is tested for each eye separately. A suitable shield or bandage occludes the eye not being tested. The directions on the cover of the Jennings apparatus are strictly followed.

(*c*) Precautions: The names of colors should not be used in instructing the applicant. If he fails to understand the test, he should name the test color himself and be instructed to pick out those which appear the same, including lighter and darker shades. The shield or bandage is applied without pressure. The color record sheets are attached to the 609 form.

(*d*) Interpretation of findings: If it is apparent that mistakes made by the applicant are due to color confusion and not to carelessness or failure to understand instructions, he is disqualified.

22. *Field of vision for form and color.*—(*a*) Apparatus: A self-registering perimeter; three test objects of standard blue, red, and green, each 5 mm. in diameter; a white test object the same size.

(*b*) Procedure: Each eye is tested separately. A shield or bandage occludes the eye not being tested. The field of vision for white and for each color is outlined by following the general directions for perimetry. The blank on which the perimeter record is made is attached to the 609 form.

(*c*) Interpretation of findings: The normal visual field for form is largest; those for blue, red, and green are successively smaller in the order given. The color fields should be nearly concentric with the form field. Any marked contraction of the color fields disqualifies the applicant for night flying. Any marked contraction of the form field disqualifies the applicant for flying.

23. *Refraction.*—(*a*) Apparatus and drugs: Electric retinoscope or plain retinoscope and wall lamp; trial case and trial frame; Snellen test type; homatropine hydrobromate, 2 per cent solution (homatropine hydrobromate disks, gr. 1/40 may be substituted).

(*b*) Procedure: The tension of both eyes must be taken by palpation and found normal before instilling a cycloplegic.

One drop of the homatropine solution is placed in each eye every 10 minutes and the eyes kept closed. At the end of one hour, the range of accommodation of each eye is tested. If it is found reduced to one diopter or less, refraction is begun. If not, the drops are continued as long as necessary to produce this result. Retinoscopy is then done in the dark room and the refraction verified on the Snellen charts. The correction and the vision obtained with it are entered in the space provided on the blank.

(*c*) Interpretation of findings: The applicant is disqualified if he has in either eye more than one diopter of hyperopia or more than one diopter of astigmatism.

24. *Ophthalmoscopic examination.*—(*a*) The media, iris, disk, blood vessels, and retina of each eye are examined for congenital and pathological abnormalities. This examination must not be made before the refraction is completed. In examining the macular region of the retina, the light should be reduced and the exposure made as brief as possible.

EAR EXAMINATION.

25. Abnormalities of the ear are causes for rejection.

26. Hearing should be normal for each ear. To determine this both the whisper and watch tests are used. After examining both external auditory canals and membrani tympani by means of a speculum and a good light (first removing any wax if present) for abnormalities such as small and tortuous opening, presence of pus, perforation, scars, retraction, or other evidence of past or present inflammation, which are causes for rejection, the candidate is required to stand at 20 feet from the examiner and facing away from him. An assistant closes the ear not under examination with his moistened index finger pressed firmly into the external auditory meatus. The examiner facing the back of the candidate exhales and then, with his residual air, whispers numbers, words, or sentences which the candidate should repeat. The other ear will then be tested in a similar manner. If unable to hear, the examiner will approach until the candidate does hear, the distance being recorded in feet. If less than 20 feet it is a cause for rejection. A quiet room is essential.

The watch test is preferably made with a loud-ticking watch, such as the ordinary Ingersoll, which, while variable, should be heard at about 40 inches. Any watch used should have been previously tried out on at least five normal persons and the distance heard made a matter of record. The number of inches in distance heard by the candidate, eyes closed and opposite ear occluded, is taken as the numerator and the distance the watch should be heard as the denominator. This should be the equivalent of 40/40; otherwise disqualifies.

NASOPHARYNX.

27. The nasopharynx region should be carefully examined. If defects can be removed by operation this should be required prior to completing the examination. If nonoperable or operation refused it is a cause for rejection. See items under "Nasopharynx" on Form No. 609, A. G. O.

EQUILIBRIUM (VESTIBULAR TESTS).

28. The nystagmus, past-pointing and falling, after turning, are tested. The turning chair must have a head rest which will hold the head 30° forward, a foot rest, and a stop pedal.

(*a*) *Nystagmus.*—Head 30° forward; turn candidate to the right, eyes closed, 10 times in exactly 20 seconds. The instant the chair is stopped click the stop watch; candidate opens his eyes and looks straight ahead at some distant point. There should occur a horizontal nystagmus to the left of 26 seconds' duration. Candidate then closes his eyes and is turned to the left; there should occur a horizontal nystagmus to the right of 26 seconds' duration. The variation of 8 seconds is allowable.

(*b*) *Pointing.*—(1) Candidate closes eyes, sitting in chair facing examiner, touches the examiner's finger held in front of him, raises his arm to perpendicular position, lowers the arm, and attempts to find the examiner's finger. First the right arm, then the left arm. The normal is always able to find the finger. (2) The pointing test is again repeated after turning to the right, 10 times in 10 seconds. During the last turn the stop pedal is released and as the chair comes into position it becomes locked. The right arm is tested, then the left, then the right, then to the left, until he ceases to past point. The normal will past point to the right three times with each arm. (3) Repeat pointing test, after turning to the left.

(*c*) *Falling.*—Candidate's head is inclined 90° forward. Turn to the right, 5 times in 10 seconds. On stopping candidate raises his head and should fall to the right. This tests the vertical semicircular canals. Turn to the left, head forward 90°; on stopping, the candidate raises his head and should fall to the left. Unless each test is normal it is a cause for rejection.

29. *Caloric douche test.*—So-called border-line cases can be tested by the caloric test, each ear separately. Water at 68° F. is allowed to run into the external auditory canal from a height of about 3 feet through a stop nozzle, with the head tilted 30° forward, until the eyes are seen to jerk and the individual becomes dizzy. This should be accurately measured by a stop watch. The type of nystagmus is then noted. With head in upright position it should be rotary and the direction of the jerk should be to the side opposite the ear douched. The length of the douching shown by the stop watch in the normal is 40 seconds. The eyes are then closed and the past pointing is taken. The head is then immediately inclined backward 60° from the perpendicular; there should appear a horizontal nystagmus to the side opposite the ear douched. The eyes are then closed and the past pointing is taken with the head in this position. The left ear is then douched and the same procedure is carried out. If instead of 40 seconds of douching there was required not more than 90 seconds, the applicant is not rejected. Care should be taken that the cold water reaches the drumhead, as wax or other obstruction in the external canal would interfere with the responses in a perfectly normal individual.

GENERAL EXAMINATION.

30. Special Regulations No. 65, W. D., November 8, 1918, and Special Regulations No. 50, Aviation Section, Signal Corps, W. D., 1917, will govern the general physical examination, except as modified herein.

31. Minimum height is 60 inches; maximum height, no limit. Minimum weight is 110 pounds; maximum weight, 180 pounds. Variations above or below these limits are allowable if applicant is well proportioned and physically sound.

32. Expansion of chest should be not less than 3 inches in an individual of average size.

33. Second degree flat foot of even extreme proportions is not disqualifying in the absence of history or symptoms of incapacitation.

34. Systolic blood pressure should not exceed 145 mm. The diastolic should be roughly two-thirds of the systolic. The mere presence of a systolic murmur in the absence of history or other cardiac symptoms is not disqualifying.

35. Infected teeth or roots are causes for rejection until corrected by proper treatment.

36. Urine examination: If albumen be found, three successive specimens must be clear of albumen before applicant can be accepted. The presence of casts or sugar is disqualifying.

NERVOUS SYSTEM.

37. Obtain history of insanity and nervous diseases carefully.

38. *Pupils.*—Classified as regular or irregular; equal or unequal; do or do not react to light and accommodation. Prolonged secondary dilatation occurs after the normal slight secondary dilatation and lasts 5 to 10 seconds.

39. *Station.*—Applicant to stand with knees pressed back, arms loose by side of body, eyes closed, inner margins of feet touching each other.

40. *Patellar reflexes.*—Classified as absent (0); diminished (−); normal (+); hyperactive (++); exaggerated (+++).

Tic.—Classified as facial, cervical, shoulder.

Tremor.—Classified as fine and coarse.

Examine fingers, hands, tongue, eyelids, and lips.

41. *Psycho motor tension.*—Ability to voluntarily relax. Tested by having candidate rest forearm upon palm of examiner and then testing the tendon reflexes of forearm with percussion hammer.

Peripheral circulation.—Examine for flushing, mottling, and cyanosis of face, trunk, and extremities. Question as to the presence of localized sweating (arm pits and palms) and cold extremities.

SPECIAL REGULATIONS NO. 70, 1917.

SECTION I.—GENERAL PROVISIONS

Army Veterinary Service.

ADMINISTRATIVE ZONES.

1. In time of war the activities of the Military Establishment embrace:

(*a*) The service of the interior.

(*b*) The service of the theater of operations.

2. The service of the interior is carried on by:

(*a*) Department commanders.

(*b*) Bureau chiefs, having for this purpose general depots of supply, general hospitals, arsenals, etc.

3. The service of the theater of operations is carried on by the commander of the field forces. The theater of operations is divided into two zones:

(*a*) The zone of the line of communications.

(*b*) The zone of the advance.

The service of the interior functions both in peace and in war; that of the theater of operations in war only.

OBJECTS OF THE VETERINARY CORPS.

4. The objects of the Veterinary Corps are to protect the health and preserve the efficiency of the animals in the Army. These objects are to be attained by:

(*a*) Preventing the introduction or extension of communicable disease.

(*b*) Reducing losses from illness or injury by the prompt application of proper treatment.

(*c*) Relieving the mobile organizations in the zone of the advance of the sick or injured animals which might impede their movements.

(*d*) Treating in hospitals on lines of communication the animals which can be restored to a serviceable condition.

The Veterinary Corps will also provide for the inspection of meat-producing animals before and after slaughter and of dressed carcasses; and for the inspection of dairy herds supplying milk to the Army.

ORGANIZATION OF THE VETERINARY CORPS IN WAR.

5. The following table gives an outline of the organization of the Veterinary Corps:

Surgeon General: Director of Veterinary Corps.	Service of the interior.	Veterinary service in connection with the purchase and transportation of animals and also at remount depots.
		Veterinary service at posts, in camps, and on the march.
		Veterinary service at embarkation depots and on transports.
		Veterinary supply divisions in medical supply depots.
	Theater of operations.	Zone of the advance: Veterinary Corps personnel. With mobile organizations. Mobile veterinary sections.
		Zone of the line of communications: Advanced base or receiving hospital. Base veterinary hospitals. Veterinary supply divisions in medical supply depots.

TITLES OF VETERINARY OFFICERS.

6. The title of the veterinary officer in immediate charge of the administration of the Veterinary Corps under the Surgeon General is Director of the Veterinary Corps. The title of the senior veterinary officer on the staff of the commander in chief of the American Expeditionary Forces is chief veterinarian; of an Army or a line of communications, assistant chief veterinarian; of an Army corps, corps veterinarian; of a division, division veterinarian; of a brigade operating independently, brigade veterinarian; of a post, the veterinarian; of a detachment, regiment, or smaller command, the veterinarian; and of a mobile veterinary section, hospital, or other veterinary formation, veterinarian in charge.

DUTIES OF VETERINARY OFFICERS (GENERAL).

7. In addition to the duties and responsibilities devolving upon him as a practitioner of veterinary medicine, the veterinary officer has certain other duties and responsibilities. These may be classified in two groups—namely: (*a*) Advisory and (*b*) administrative. The former includes the duties of the staff officer to his commander; the latter, the duties of an organization or detachment commander to his superiors and to the organization or detachment which he commands.

8. The duties of a veterinary officer acting in an advisory capacity are, in general, as follows:

(*a*) To keep himself informed of the condition of the animals of the command and of conditions which may affect their health and efficiency.

(*b*) To communicate to his commander such of this information as has a bearing upon military administration and to make such recommendations as may be deemed advisable to meet existing or anticipated conditions. The information which may be required and the recommendations will include the state of the health and efficiency of the animals of the command, the shoeing, the sanitary condition of the horse lines or stables, the condition of the forage, the water supply, the methods of feeding and watering, stable practices, the disposal of waste matter, disposition of sick and injured animals, and any other matters which may affect the health or efficiency of the animals of the organization.

(*c*) To make prescribed reports and returns and to take such action on the reports and returns of his subordinates as may be required by existing regulations.

(*d*) To perform such other duties as may be required of him by superior authority.

(*e*) While veterinary officers acting as technical advisers to their commanders are responsible for pointing out insanitary conditions in connection with the animals of the Army and making proper recommendations for their correction, the direct responsibility rests with the commander. If, however, the commander authorizes the veterinary officer to give orders in his name for the correction of defects, then the duties and responsibilities of the latter are correspondingly increased.

(*f*) Veterinary officers must always remember that when any veterinary necessity of the moment comes in conflict with a purely military necessity the former must be considered as of secondary importance, unless they are convinced that the authority responsible for the military necessity is not aware of the far-reaching results from a veterinary point of view, in which case they may represent the matter to the military authority concerned, who alone is in possession of all the facts and who alone can decide.

9. Veterinary officers acting in an administrative capacity are directly responsible for the condition and efficiency of their commands. Their duties are similar in character to those of administrative officers of the line of the Army. More specifically they are charged with the following:

(*a*) The training, discipline, efficiency, and assignment to duty of the personnel which they command and the supervision of the internal economy of their organizations.

(*b*) The maintenance of equipment in proper condition by requisition for supplies needed and by proper care of property on hand.

(*c*) The keeping of the prescribed records and the making of the prescribed reports and returns.

(*d*) The performance of such other duties as many be required of them by superior authority.

SECTION II.—THE VETERINARY SERVICE OF THE INTERIOR.

ORGANIZATION.

10. The veterinary service of the interior is administered by the director of the Veterinary Corps under the direction of the Surgeon General. It consists of the supervision of all matters pertaining to the health and efficiency of the animals of the Army at post and camps, veterinary matters connected with the remount service and the embarkation and overseas transport of animals, the direction of the veterinary personnel, and the collection and distribution of veterinary supplies.

DIRECTOR OF THE VETERINARY CORPS.

11. The director of the Veterinary Corps is the representative of the Surgeon General in the administration of the veterinary service of the Army in the theater of operations as well as in the interior.

12. He will nominate to the Surgeon General veterinary officers for the administrative positions in the Veterinary Corps and will detail officers, noncommissioned officers, and men for duty under these administrative officers, to detached organizations and to the remount service, embarkation depots, and overseas transports. He will also select officers for special appointments.

SENIOR VETERINARY OFFICERS.

13. The senior veterinary officer with any detached organization will conform to the regulations for division veterinarians, so far as they apply, and will, unless holding a purely administrative appointment or specially exempted, perform the regular duties of his position in addition.

CAMP VETERINARIANS.

13½. The veterinary service of a camp is under the direction of the senior veterinary officer on the staff of the camp commander, who will be designated as camp veterinarian. His duties as regards the camp veterinary service, including meat and dairy inspection, are the same as those specified hereinafter for a division veterinarian as regards the division, and he will make the same reports and returns. He will also supply necessary veterinary service to units or organizations having no veterinarians attached. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

DIVISION VETERINARIANS.

14. The division veterinarian is attached to the headquarters of the division and is responsible to the division commander and to the Surgeon General for the administration of the veterinary service of the division. His duties are of an advisory and administrative character. In his advisory capacity he will keep the division commander informed concerning the health and efficiency of the animals in the division and will make recommendations regarding hygienic and sanitary matters affecting them. In his administrative capacity he will have charge, under the division commander, of the veterinary personnel, veterinary equipment, etc., of the division. He will recommend the detail of veterinary personnel to render veterinary service to organizations to which veterinary personnel is not attached.

15. He will see that the veterinary personnel perform the duties required of them. It is necessary that these duties be performed in exactly the manner described below, in order that the veterinary personnel may receive training while in cantonments which will prepare them for duty in the theater of operations. If a sufficient number of cases do not develop to furnish the necessary number of animals for training purposes, animals in normal condition will be obtained from organizations for temporary use as simulated patients.

16. The division veterinarian will be held responsible for the proper instruction of the veterinary personnel in regard to their military duties and responsibilities. Where a school for the instruction of veterinary officers is in operation, he will require veterinary officers to attend it, and in the absence of such a school he will make such arrangements as are possible for such instruction.

17. He will make monthly reports on Forms 111, M. D., and 47A, M. D., in duplicate, retain one copy and forward one direct to the Director of the Veterinary Corps, Office of the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

18. He will visit the various horse lines in his division daily and make an inspection of the veterinary service. He will make frequent inspections of the animals of each organization, the sanitary conditions of the picket lines or stables, the condition of the forage, the methods of feeding and watering, and any other condition which may affect the health or efficiency of the animals. The mobile veterinary section will also be inspected at frequent intervals. This inspection will include the condition of the animals present, the sanitary condition of the premises, the veterinary supplies, the condition of the forage, the methods of feeding, watering, and cleaning the animals, and the methods and efficiency of the veterinary personnel.

19. He will prepare a report on Form 102, M. D., for the week ending at noon of each Friday. This report will include all animals in the camp, exclusive of those at the auxiliary remount depot, and is practically a consolidation of the daily reports from the veterinarians of all units. When two division veterinarians are on duty in one camp each will report on his divisional animals at that camp and the senior will in addition include the animals of other detached units. In the absence of a division veterinarian, or officer acting as such, the camp veterinarian will furnish this information. This report will be made in duplicate, one copy retained and one forwarded direct to the Director of the Veterinary Corps, Office of the Surgeon General. The division veterinarian will also furnish the division surgeon with a copy of the weekly report on Form 110, M. D., and with copies of any special reports from the meat and dairy inspector, and will forward the original in each case through the commanding general to the Director of the Veterinary Corps, Office of the Surgeon General. He will also furnish a daily numerical report of sick animals to the commanding general. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

20. Upon learning of the existence or suspected existence of a serious communicable disease among the animals in any of the organizations of the division, the division veterinarian will at once make an investigation and see that the proper action is taken to control and prevent the spread of infection. If the disease reported is glanders, he will recommend to the division commander the immediate quarantine of the animals of the unit in which it has developed or is suspected. His duties regarding the conduct of this quarantine, the reports and recommendations to be made, and all other measures to be adopted by him in controlling the disease, as set forth in paragraph 55, will be strictly complied with. Similar action and reports are required in regard to other serious communicable diseases.

The instructions in paragraph 52 regarding privately owned animals of contractors or others are equally applicable to such animals when admitted to the divisional area or other parts of the camp outside the auxiliary remount depot, and the division veterinarian, as the senior veterinary officer present, will see that they are followed. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

21. He will communicate direct with the senior veterinarian of all other formations or posts in his immediate vicinity, informing them of the outbreak.

22. He will fully inform himself of the efficiency, attention to duty, instruction, and equipment of all veterinary personnel attached to the division, and of the adequacy, serviceability, and proper use of veterinary supplies by means of frequent and thorough inspections. He will see that the responsible veterinary officers make timely requisitions for all equipment and supplies. He should hold them responsible for all shortages unless they can show that they have submitted requisitions in accordance with standing orders. Requisitions for veterinary supplies will be submitted to him in triplicate on Form 35, M. D. He will subject them to a careful scrutiny, seeing that they are prepared in accordance with authorized allowances and instructions issued from time to time, and will make any changes deemed proper. He will personally verify, if necessary, the quantities reported on hand. He will refer all three copies to the division surgeon for approval. Two copies are then sent to the officer in charge of the camp medical supply depot for issue and one to the Surgeon General. In case of emergency he will request the division surgeon to authorize the camp medical supply officer to make telegraphic requisition or purchase in open market. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

VETERINARY OFFICERS ATTACHED TO MOBILE ORGANIZATIONS.

23. Veterinary officers attached to mobile organizations will bear the same relation to the division veterinarian as now exists under the regulations and customs of the service between medical officers so assigned and the division surgeon.

24. Where more than one veterinary officer is attached to a mobile organization, the custom of the service will govern and the junior will be subject to the orders of the senior. All reports required will be made by the senior officer, or by the junior officer under the direction of the senior.

25. A veterinary officer attached to a mobile or other organization will inspect daily the animals of his organization for symptoms of communicable or other diseases, injuries, evidences of error in feeding, watering, or stable management, and for faulty shoeing. He will investigate the sanitary condition of stables, corrals, picket lines, and other places occupied by the animals, of feeding and watering places, and of forage and forage storage. He will keep himself fully informed of all conditions concerning the animals of the unit, will promptly report to the immediate commanding officer any condition or practice observed which is affecting or is likely to affect the health or efficiency of the animals, and will make suitable recommendation for correcting the defects. If any animal is found to be affected with a communicable disease of a serious nature, or exhibits symptoms suspicious of the same, it will be isolated at once and report of the condition made immediately to the commanding officer and to the division veterinarian, the latter being notified by telephone or by special orderly. In case there is no division veterinarian present the camp veterinarian will be notified. He will prepare a daily report on Form 102, M. D., in duplicate, retaining one copy and submitting one to the division veterinarian or to the camp veterinarian in camps having no divisional organization. The veterinarian of a detached command, camp, or post will not submit the daily report, but all unit veterinarians will furnish a daily numerical report of sick animals to the unit commander. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

26. He will prescribe or apply treatment to those animals affected with minor ailments which are likely to respond quickly to treatment and which do not interfere with the mobility of the animal. All other sick or injured animals will be given such immediate attention as they

may require and will then be reported to the commanding officer for delivery to the mobile veterinary section for transfer to a hospital. An index card for hospital cases, Form 115, M. D., will be filled out as far as possible when each case is admitted to sick report, and the progress of the case will be recorded on the card in the manner described in paragraph 57. Any animal will be regarded as on sick report which is incapacitated for full duty by reason of physical disability. This will include animals in hospital, in convalescent corrals, and in sick lines, but not those isolated for observation or quarantined on account of exposure to infection, unless they develop symptoms of disease or injury or give a positive or doubtful reaction to a test for glanders. On the termination of the case by transfer of the animal to a hospital in another command (by the mobile veterinary section or otherwise), return to duty, death or separation from the service, the card will be completed, signed by the veterinarian, and filed as a permanent record. If the animal is delivered to a mobile veterinary section or transferred to a hospital in another command, a copy of the completed card, marked "Transfer Card," will accompany it to be delivered to the veterinarian of the place receiving the animal. If a descriptive card is received with the animal, the history of the animal will be copied on the hospital record, and when the case is terminated a notation of the date of receipt and discharge of the animal and the condition for which it was treated will be made on the descriptive card which will accompany the animal if returned to duty or transferred. When animals are to be delivered to the mobile veterinary section the veterinarian of the unit will be responsible that a tag showing the number of the case and its organization is securely attached. Animals suffering severely from an incurable condition shall be destroyed. (A. R. 1073, C. A. R. No. 58, July 6, 1917.) (*S. R. No. 70, C. No. 1, July 5, 1918.*)

27. He will examine the condition of the forage and the method of storing the same as often as may be necessary and report any objectionable conditions to the commanding officer of the organization and to the division veterinarian.

28. When animals are shipped directly from the place of purchase to organizations in a cantonment or post, the division veterinarian or other senior veterinary officer of the command will supervise their reception. The procedure regarding quarantine and mallein testing laid down in paragraph 54 will be followed. The quarantine should be maintained in the organization receiving the animals. During the quarantine period the responsible veterinary officer will closely observe the animals for symptoms of any other communicable disease, and affected animals will be isolated in the organization, if practicable; otherwise they will be removed to the hospital or other suitable place where they will be maintained in quarantine until recovery and until quarantine requirements for possible infection with glanders are complied with. When animals are received under the provisions of this paragraph the veterinarian will prepare a report on Form 112, M. D. This report will be in triplicate, one copy retained and two forwarded to the division veterinarian, who will retain one and forward one through the commanding general to the Director of the Veterinary Corps, Office of the Surgeon General.

When the animals of a unit are to be turned in to an auxiliary remount depot each one will be mallein-tested immediately before being transferred or upon receipt at the depot. Reactors will be destroyed promptly, and animals of an organization in which there are reactors will be regarded as suspects and quarantined as described in paragraph 55. If practicable the quarantine should be maintained in the organization, but the veterinarian of the auxiliary remount depot will be consulted and fully informed of all circumstances. Any suspicious reactors must be plainly marked and described in such a way that their identity will not be lost, and they likewise will be kept in strict quarantine from all others until a report is received on the result of the serological test. A careful examination must be made of all animals turned in to assure their freedom from any other communicable disease. Infected stables or corrals must be properly cleaned and disinfected as soon as possible after being vacated. The division veterinarian, or the officer acting as such, as long as he remains in camp will be responsible for carrying out these instructions. If directed by proper authority to leave before the animals are tested and turned over, he will transmit full information and instructions to the next officer responsible under these regulations. If all the veterinarians of a division depart, the camp veterinarian, if there be one, otherwise the veterinarian of the auxiliary remount depot, will be responsible for compliance with the foregoing instructions. It is necessary that division or other veterinarians cooperate fully with the veterinarians of auxiliary remount depots in these measures to secure satisfactory results. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

29. Captured horses and mules will be examined for symptoms of communicable disease and tested for glanders before being placed with the animals of the Army.

30. As a detachment commander the veterinarian of an organization, command, or post is responsible for the care, discipline, instruction, equipment, and assignment to duty of his men, and the adequacy, serviceability, and proper use of all supplies and equipment. Requisitions for veterinary supplies will be made in quadruplicate on Form 35, M. D. Three copies will be presented to the division veterinarian or to the camp veterinarian in camps having no divisional organization, and one retained. Requisitions for quartermaster and ordnance supplies will be made on the proper supply officer. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

MOBILE VETERINARY SECTIONS.

31. Mobile veterinary sections are field units, one being allotted to each division and to each brigade of Cavalry. Subject to the orders of the division commander, their movements are controlled by the division veterinarian.

32. Their function is to take charge of sick and injured animals sent to them from the mobile organizations of the division and convey them to a hospital. In the theater of operations, when the division is in the zone of combat, the mobile veterinary section will be used only as a dressing station, where animals will be given such treatment as they may require to prepare them for removal to a base hospital; when the division is in camp, it may serve as a temporary hospital for the treatment of minor ailments, but in no case should so many animals be treated as to interfere with the mobile character of the unit and the performance of its proper function—an evacuating unit. In cantonments the serious cases will be sent to the veterinary hospital. Arrangements in regard to these matters will be made by the division veterinarian. While in the cantonment the personnel of the mobile veterinary section will be exercised in the practice of bringing animals from the mobile organizations to the mobile veterinary section, taking animals to base hospitals, taking down and erecting shelter, establishing picket lines, etc. For this purpose, it will accompany troops on practice marches and use normal animals obtained temporarily from organizations of the division as simulated patients.

33. The veterinary officer in charge of the mobile veterinary section will bear the same relation to the division veterinarian as now exists under the regulations and the customs of the service between the commanding officer of the sanitary train and the division surgeon. He will issue a receipt to the responsible officer for all sick animals received, and will be responsible for the care and treatment of such animals until they are returned to the organization or evacuated to a base or other veterinary hospital. On delivering them to a hospital he will take a receipt from the veterinary officer in charge. Upon returning an animal to its organization he will take a receipt from the responsible officer. These receipts will be made out on Form 116, M. D. A copy of Form 115, M. D., completed as a transfer card by the unit or other veterinarian, should accompany each sick animal taken over by the mobile section. An exact copy of this card will be made down to the signature, and if no card accompanies the animal an original one must be prepared. On the reverse of both original and duplicate will be noted date of receipt of the animal, date and nature of changes in diagnoses, complications, special treatment, and other data necessary to make a continuous clinical record of the case while it remains in the section. The cards for animals received by a mobile section will be numbered consecutively from 1 upward, and both copies of the card will be given the same serial number; also the number of the section and the division to which it pertains. On the transfer of the animal to a veterinary hospital, the duplicate copy will be completed by the signature of the veterinarian in charge, dated, marked "Transfer Card," and forwarded to the receiving veterinarian. The original transfer card is likewise completed by signature and placed in the permanent file of the section. Should the animal be disposed of in any other way than transferred sick, both copies of the card after completion, with suitable notation as to the disposition, are retained. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

34. He will closely observe all animals under his care for symptoms of communicable disease, and upon the discovery of any animal so affected he will immediately isolate the same and report any serious condition to the division veterinarian, notifying him by telephone or by special orderly.

35. As the veterinarian of a mobile organization, he will submit to the division veterinarian the daily report on Form 102, M. D., required by paragraph 25. This report will include only animals permanently assigned to his unit. On each Friday he will make a report to the division veterinarian on Form 102, M. D. (modified), for the week ending at noon of that day, as regards animals temporarily in his charge. This report will show the number of animals on hand, the number received during the week, and the number returned to organizations from which the animals were received, and the diagnosis of the disease or injury in each case. This information should be

compiled from the retained transfer cards (Form 115, M. D.) on file in the section. Under remarks will appear a résumé of the work of the section for the week. (*S. R. No. 70, C. No. 1, July 5, 1917.*)

36. Requisition for forage for animals in his charge will be made upon the camp quartermaster, such requisitions indicating the organizations to which the animals belong for which forage is required.

37. As a unit commander he is responsible for the care, discipline, instruction, equipment, and assignment to duty of his men and for the adequacy, serviceability, and proper use of all supplies and equipment. Requisitions for veterinary supplies will be made in quadruplicate on Form 35, M. D. Three copies will be presented to the division veterinarian and one retained. Requisitions for quartermaster and ordnance equipment will be made on the proper supply officers. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

MEAT AND DAIRY INSPECTORS.

38. The veterinary officer acting as meat and dairy inspector will inspect as often as may appear necessary the cows and the dairy farms from which the supply of milk (other than condensed or canned) is received.

39. He will make an inspection of carcasses of dressed meats delivered by contractors and will make an ante and post mortem inspection of any animals which may be slaughtered for food.

40. Any undesirable conditions found by him will be reported promptly to the commanding officer of the organization and to the division veterinarian. He will also make a report to the division veterinarian every Friday of the number and character of the inspections and examinations made by him up to noon of that day.

41. He will also perform any other professional duties to which he may be detailed by proper authority.

AUXILIARY REMOUNT DEPOTS.

42. The senior veterinary officer assigned to an auxiliary remount depot will be designated as the veterinarian. Under the commanding officer of the depot he is in charge of the veterinary service thereof and will assign the officers and men of his detachment to their particular duties. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

43. He will arrange for the daily inspection of the animals in the corrals in order that sick or injured animals will be removed to the hospital or otherwise properly disposed of.

44. He will see that sick or injured animals receive proper care and attention, and that they are returned to the remount depot when they recover.

45. He will be in charge of the veterinary hospital, operating room, convalescent corrals, and other places for the care of sick or injured animals. He will be responsible for the efficient organization and administration of the hospital service, for the cleanliness and sanitation of all parts of the hospital, and for the preparation of the required reports and records. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

46. He will be responsible that the authorized allowances of veterinary supplies and equipment are on hand at all times; that they are in a serviceable condition; and that care and economy are exercised in their expenditure or use by all concerned. He will prepare requisitions for veterinary supplies in quadruplicate on Form 35, M. D. These requisitions will be made out in compliance with existing orders, three copies submitted to the division surgeon and one retained. In the absence of a division surgeon, the camp surgeon will act on veterinary requisitions. After receiving the approval of the division surgeon, two copies of the requisition are sent to the officer in charge of the camp medical supply depot for issue and one to the Surgeon General. In case of emergency the veterinarian will request the division surgeon to authorize the camp medical supply officer to make telegraphic requisition or purchase in open market. Requisitions for quartermaster and ordnance supplies will be made on the proper supply officers. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

47. He will supervise the sanitation of the depot in all matters affecting the health and efficiency of the animals, and will be responsible that suitable recommendations for the correction of sanitary defects are made promptly to the commanding officer. These results are best accomplished by frequent and thorough inspection of all parts of the depot occupied by animals, including the forage and storage of the same. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

48. He will make a daily inspection of the entire hospital, paying special attention to cleanliness, sanitation, and the care and treatment given sick animals. The presence of the junior veterinary

officers at inspections should be required either at their posts of duty or to accompany the inspecting officer for purposes of instruction. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

49. As a detachment commander he will be responsible for the care, discipline, instruction, equipment, and assignment to duty of all enlisted men of the Veterinary Corps at the depot. He will be responsible that all veterinary officers are properly instructed with regard to their professional and military duties and responsibilities. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

50. He will make monthly reports on Forms 111, M. D., and 47A, M. D., in duplicate, retaining one copy and forwarding one direct to the Director of the Veterinary Corps, Office of the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

51. He will make suitable recommendations to the commanding officer as to the best method of disposing of animal carcasses and will supervise the operation of the plan adopted. Contracts with civilians for the disposal of dead animals should specify removal without delay on receipt of notification. If the carcasses are to be burned or buried by the military authorities, the work will be done with all possible expedition and under sanitary precautions. Animals in severe pain from an incurable condition and those found to be affected with glanders will be immediately destroyed. No animal with positive signs of glanders will be held for further testing, nor will those reacting positively to the mallein test be held for further test of any kind. Other sick or injured animals which are not likely to again become serviceable will be disposed of according to Army Regulations. (Par. 1073, as amended by C. A. R. No. 58, July 6, 1917.) (*S. R. No. 70, C. No. 1, July 5, 1918.*)

52. The veterinarian will advise the commanding officer in regard to the prevention of disease among the animals at the depot, and especially in regard to the control of communicable diseases. Animals owned by contractors or other private parties, whether or not stabled in the depot and allowed therein for any purpose, will be subject to the same inspection by the veterinarian as are public animals. Evidence will be required of their freedom from glanders or other communicable disease. When the application of the mallein test to such animals is deemed advisable by the veterinarian, he will so report to the commanding officer; and should the owner refuse to consent to their being tested they should be wholly excluded from the depot. In the same way cases of glanders or other suspects may be excluded. If a case of glanders is discovered amongst such animals while they are at the depot, the procedure as regards quarantine, mallein, and other testing and the destruction of infected animals will be the same as for an infected corral or organization of public animals. This provision should be explained fully to private owners and their agreement thereto exacted before the introduction of their animals into the depot area is premitted. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

53. Immediately after taking charge of the veterinary service in an auxiliary remount depot, the senior veterinary officer will report to the Surgeon General of the Army, through military channels, on the arrangements adopted for the prevention and control of disease among the animals, and he will immediately give notice, through the same channels, of any change in the arrangements. He will also report in the same manner, on taking station, on the construction, adaptability, and adequacy of the equipment provided for veterinary work. Veterinary officers who have already taken station will make these reports immediately upon the receipt of these regulations.

54. Upon receipt of animals from any source whatsoever they will all be examined carefully by a veterinary officer, and if in cars will be promptly unloaded. The sick will be sent to the hospital, the others placed in isolation paddocks apart from other animals, and the ophthalmic mallein test for glanders administered to both sick and well at the earliest practicable date. Those giving a positive reaction will be destroyed at once, and all apparently healthy animals of a shipment in which there were any reactors will be retested after 21 days from the date of the last test by which reactors were found. It is contemplated, in other words, to hold each such lot of animals in quarantine, applying successive tests at intervals of three weeks, until a test is made which yields no positive or doubtful reactions. When the result of any of the tests is indefinite or suspicious, the animal will be separated from all other animals, the test will be repeated, and a specimen of blood drawn and forwarded to the nearest laboratory where provision has been made for making the complement fixation and agglutination tests for glanders. If either the mallein retest or the blood test is positive, the animal will be destroyed at once. A post-mortem examination will be made of all animals destroyed which failed to show physical signs before death, and the report of the findings filed with the retained records of the veterinarian. Carcasses of animals destroyed for glanders will be removed promptly from the vicinity of other animals. They must be disposed of to contractors or they will be burned or buried with proper sanitary precautions,

Contractors will be warned against danger of possible infection in handling carcasses of glandered animals.

All animals should be tested for glanders before they leave an auxiliary remount depot, and if the ophthalmic mallein test has been previously applied twice, a third test should not be administered until 21 days after the application of the second test. If on account of military necessity any animals are issued without being tested, a report will be made showing their number and kind and the designation and location of the organization to which they are sent. This report will be in duplicate and forwarded through military channels, one copy to the commanding officer of the division, detached organization, or depot to which the animals are shipped and the other copy to the Director of the Veterinary Corps, Office of the Surgeon General.

Whenever by any of the approved methods a diagnosis of glanders is made in a shipment or other lot of animals received from any source, whether within the camp or outside of it, the veterinarian will immediately notify verbally or by message, confirmed the same day by letter, the veterinarian of the command from which the animals came. This should be the division veterinarian or one acting as such in the case of a divisional unit. If the case is the first one from the organization, or if a new case is at any time discovered among the animals in a depot, a telegraphic report of the facts will be made to the Director of the Veterinary Corps, Office of the Surgeon General, and stating that the veterinarian of the issuing unit has been notified as above instructed. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

55. On the discovery of glanders all other animals in the lot, shipment, organization, corral, stable, or other place in which the case was found will be regarded as contacts, and immediate steps taken to prevent their coming in contact in any way with clean animals elsewhere. If the case has developed in a mobile unit, all the animals in that unit will be considered contacts. The suspected animal will be segregated in a clean corral or stable, and the corral or stable in which the case was discovered will be disinfected. Fences, stalls, floors, partitions, feed boxes, and watering troughs and stable utensils will be cleaned of all loose dirt, scrubbed with soap and water, and sprayed with 2 per cent aqueous solution of the cresol compound, issued by the Medical Department. Infected forage and bedding will be destroyed. The suspected animals will be fed invariably and watered usually at their corral. Should occasion arise to water elsewhere, buckets will be carried and used exclusively for this purpose and access to watering troughs elsewhere prohibited. Sick animals will not be removed to any other place for treatment. All contacts will be given the mallein test. Retesting in 21 days and complement fixation tests will be done as set forth in paragraph 54. The quarantine will not be raised until a clean test has proved presumptively that all the animals are free from glanders. Upon being released from quarantine the animals will be turned into clean quarters and the corral or stable in which they have been kept will again be cleaned and disinfected, as already described, irrespective of whether any cases of glanders have developed during the quarantine period.

The veterinarian is responsible for the early detection of glanders and for proper recommendations to the commanding officer regarding the institution of the quarantine measures prescribed herein. Should he deem the quarantine of the entire depot advisable he should so state. He will advise when the quarantine should be removed. These recommendations should ordinarily be in writing. He should supervise the operation of the quarantine and make sure that its provisions are fully and conscientiously carried out by all concerned. From the discovery of the first case to the time when a clean test has been made and the animals have been released from quarantine, he will report weekly in writing to the Director of the Veterinary Corps, Office of the Surgeon General, through military channels. This report will cover the measures adopted to control the disease, the efficacy of the quarantine, reasons for its failure in any respect, the progress of the disease, numbers tested and kinds of tests, number destroyed, and any other information pertaining to the epidemic. All recommendations made to the commanding officer and the action taken thereon will likewise be included in this report. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

56. When animals are shipped from a remount depot they will receive a careful examination under the supervision of the veterinarian to detect communicable disease and eliminate the sick. Stock cars submitted for their transportation are required to be cleaned by the railroads of manure and loose litter and placed in a safe condition, but not disinfected. The railroad will also furnish bedding, which will not be placed in the cars until they have been cleaned and disinfected. The veterinarian will examine the cars on their arrival and will determine the extent and necessity of further cleaning and disinfecting, and will supervise this work, notifying the commanding officer when the cars are ready to receive bedding and to be loaded. The veterinarian will also make a re-

port on Form 101, M. D., covering the shipment. This report will be prepared in triplicate as far as the first asterisk, two copies sent direct to the veterinarian of the organization receiving the animals, and one retained. The receiving veterinarian will complete his copies, retain one, and forward one, through the division veterinarian, to the Director of the Veterinary Corps, Office of the Surgeon General. The veterinarian of a command will also fully instruct in their duties all veterinary personnel accompanying shipments of animals. A veterinary officer assigned to this duty will, upon its completion, submit a detailed report of the journey to the Director of the Veterinary Corps, Office of the Surgeon General, through military channels. This report will show number and kind of animals; time required to load; suitability and cleanliness of the cars provided; date and hour of departure, of arrival and departure, at each feeding station; and of arrival at destination; description of feeding and watering facilities and other conditions encountered en route; sanitation, adequacy, and suitability of yards provided; kind and quality of forage used, reasons for and duration of delays en route; names of all attendants; complete data regarding any sickness or deaths among the animals and their condition on arrival. Should sick animals be left en route, the diagnosis and the name of the individual with whom thus left should be stated. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

57. He will see that an accurate clinical record of all cases is kept on the index card for hospital cases, Form 115, M. D. A card will be made out for each animal on admission to sick report, the cards being numbered consecutively. Any animal will be regarded as on sick report which is incapacitated for full duty by reason of physical disability. This will include animals in hospital, in convalescent corrals, and in sick lines, but not those isolated for observation or quarantined on account of exposure to infection, unless they develop symptoms of disease or injury or give a positive or doubtful reaction to a test for glanders. The blank spaces on the front of the card will be carefully filled out as far as possible when the animal is placed under treatment, the corral, ward, or stable, and the number of stall also being entered for convenience in locating the animal. The progress of the cases will be shown by proper entries on the back of the card, giving the dates and nature of treatment and changes therein, date and character of operative measures applied, date and nature of complications and sequelæ, and any other data bearing on the history of the case or the future usefulness of the animal. For most cases brief entries will suffice, but when the case is unusual or likely to be of scientific interest the data should be recorded in more detail. In recording diagnoses and complications the official nomenclature will be adhered to. On the termination of the case by return to full duty, death, separation from the service, or transfer to a hospital elsewhere, the card will be completed, signed by the veterinarian in charge, and filed as a permanent record of the hospital. When an animal is transferred from an organization or hospital to another hospital a copy of the completed card marked "Transfer card" will accompany him to be turned over to the veterinarian of the place receiving the animal. If a descriptive card is received with the animal the history of the animal will be copied on the hospital record card, and when the case is terminated a notation of the date of the receipt and discharge of the animal and the condition for which it was treated will be made on the descriptive card, which will accompany the animal if returned to duty or transferred. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

58. The veterinarian will also prepare reports on Form 102, M. D., covering the week ending at noon of each Friday. One report will be made for animals in the hospital only, and the other for the remainder of the depot. These reports will be made in duplicate, one copy retained and one forwarded direct to the Director of the Veterinary Corps, Office of the Surgeon General. He will also submit a daily numerical report of sick animals to the commanding officer. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

59. He will also report the arrival of each shipment of animals received at the depot on Form 112, M. D. This report will be in duplicate, one copy retained and one sent to the Director of the Veterinary Corps, Office of the Surgeon General, through military channels. Animals turned in from any organization will be similarly reported on this form. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

60. Other veterinary officers detailed to duty in auxiliary remount depots will be under the immediate direction of the senior veterinary officer.

PURCHASING ZONE.

61. The senior veterinary officer assigned to the headquarters of a purchasing zone will be designated as the purchasing zone veterinarian. He will report to the officer in charge and act as his veterinary adviser in all matters involving the purchase and transportation of animals. He will maintain an office at the zone headquarters and will not be assigned to duty with a purchasing board except in an emergency. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

62. Under the officer in charge he will assign veterinary officers to purchasing boards or to other appropriate duties; will see that they are fully instructed as to these duties; and will supervise the work of all veterinarians detailed to the zone. As a detachment commander he will be responsible for the care, discipline, instruction, equipment, and assignment to duty of enlisted men of the Veterinary Corps stationed in the zone. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

63. He will also supervise the care of public animals which may be sick or disabled. If a hospital is available at headquarters of the zone or elsewhere he will be in charge of it and responsible for its administration, the care of the animals, and the assignment to duty therein of any available assistants. The records and reports will be the same as for other veterinary hospitals. He will submit the weekly reports on Form 102, M. D., as required by paragraph 58, from the veterinarian of an auxiliary remount depot. A separate hospital report will not be required unless animals are received from organizations. He will be responsible for the adequacy, serviceability, and proper use of veterinary supplies or equipment. Veterinary supplies will be obtained in requisition Form 35, M. D., prepared in quadruplicate. Three copies will be sent direct to the Director of the Veterinary Corps, Office of the Surgeon General, and one retained. In case of emergency he is authorized to make request by wire, but he should foresee his needs and obviate this necessity. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

64. He will also supervise the sanitary conditions which are involved in the purchase and transportation of animals in or through the zone. He will thoroughly familiarize himself with local conditions bearing on the health of animals and will keep in close touch with the work of civilian inspectors who report to the officer in charge of the zone. To enable him to properly perform these duties he should, when necessary, visit places where inspectors or purchasing boards are at work. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

65. He will report insanitary conditions verbally or in writing to the officer in charge and make recommendations with regard to the correction of the same. Written sanitary reports will be submitted to the officer in charge and forwarded through military channels to the War Department. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

66. He will prepare monthly reports on Form 111, M. D., and 47A, M. D., in duplicate, forwarding one copy direct to the Director of the Veterinary Corps, Office of the Surgeon General, and retaining one. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

67. Veterinary officers assigned to purchasing boards will report direct to the officer in charge and act as his advisers in all veterinary matters. When more than one veterinarian is assigned to the same board the senior will act as the veterinarian in accordance with the customs of the service. In the performance of their professional duties they are under the supervision of the zone veterinarian. In the inspection of animals for purchase they are responsible for the detection of physical defects and evidence of disease. Whenever animals are collected for purchase or shipment they will investigate the sanitary condition of the yards or stables and will recommend to the purchasing officer proper measures to correct defects. They will apply the mallein test to all animals before they are shipped. Great care will be exercised in the inspection of animals and the use of the test in order to eliminate positive or doubtful reactors, and on the discovery of such all other animals from the same lot or stable will be regarded as contacts subject to quarantine and retesting as provided in paragraphs 54 and 55. Whenever it is impracticable to quarantine at purchasing points or at zone headquarters the contacts will be shipped as a separate lot and will be accompanied by a full written statement from the senior veterinary officer of the board for the information and guidance of the veterinarian at the destination of the animals. The zone veterinarian, the State veterinarian, and the local representative of the Bureau of Animal Industry, if there is one, will be notified at once on the discovery of a positive or suspicious reactor, and all veterinarians attached to boards will cooperate fully with the local live-stock sanitary authorities in every effort to limit the extension of infection. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

68. A veterinary officer assigned to a purchasing board will report on each lot of animals which he has inspected on Form 109, M. D. This report will be made in triplicate, one copy retained and two forwarded to the zone veterinarian, who will complete them both, retain one and forward one through the officer in charge to the Director of the Veterinary Corps, Office of the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

69. Reports will likewise be made of any undesirable sanitary conditions to which animals may have been exposed either before, during, or after inspection, which, with suitable recommendations, will be submitted to the officer in charge and forwarded through channels to the Director of the Veterinary Corps, Office of the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

PORTS OF EMBARKATION.

70. The senior veterinary officer detailed to a port of embarkation will be designated as port veterinarian. He will report directly to the commanding general and will act as his adviser in all veterinary matters pertaining to the port. He will supervise and direct the veterinary service of the port and of all animal transports. His relation to the veterinary service of the animal embarkation depot and of other camps at the port is similar to that of a division veterinarian to the veterinary service of the auxiliary remount depot and of divisional units in a cantonment, respectively. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

71. Under the orders of the commanding general he will maintain an office at headquarters of the port, and in addition to other administrative duties of his office will provide for a transport veterinary service, a transport inspection service, and a meat and dairy inspection service. He will detail all veterinary officers and enlisted men to appropriate duties. In order that the services of all casual veterinary personnel may be utilized at the animal embarkation depot he will, after conferring with the commanding officer thereof, recommend suitable temporary assignments as required. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

72. He will see that all animal transports are provided with adequate veterinary personnel. He will assign to available transports veterinary officers detailed to the port by War Department orders for transport duty, and when no such officer is available will recommend the detail of a suitable casual or other available officer. If several veterinarians are to travel on the same boat, he will designate one as transport veterinarian, who should be the senior in rank. He will see that all transport veterinarians and personnel are fully instructed in their duties. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

73. He will also supervise the veterinary sanitation of all animal transports and is responsible for making timely recommendations to the commanding general for the correction of sanitary defects. He will make or cause to be made a sanitary inspection of every animal transport on its arrival in port. He will supervise all cleaning and disinfection of the quarters occupied by animals on transports, and will see that they are put in proper sanitary condition before loading. He will make at least one personal inspection of every transport before it leaves port, examining carefully into all the arrangements concerning the health and sanitation of the animals. He will inspect the ramps and other facilities for loading; the accommodations for the animals, including the type and suitability of the fittings, adequacy of head room, space for each animal, and space for cleaning, feeding, or removal of sick or injured; the method of tying in stalls; the provisions for insuring and distributing an adequate supply of fresh air, both by artificial means or auxiliary ventilating apparatus, such as wind sails; the arrangements for cleaning and flushing all decks; the lighting, including lanterns or candles, in case of failure of the electric lighting; the water supply as to quality, adequacy, and provision for renewal, and the cleanliness of storage tanks; and the forage as to quantity, quality, and storage facilities. He should see that thermometers are provided for all holds in which animals are carried, and that there is an adequate supply of forks, shovels, and rubber hose. He will also inspect the equipment and quarters of the veterinary detachment on a transport. He will inspect the veterinary supplies, instruments, disinfecting apparatus, or other facilities provided for the care of sick or injured animals and for the prevention of disease, and will take prompt steps to remedy any deficiencies. At least one double stall on each animal deck convenient of access to a hatchway should be left empty when loading, in order that disabled animals may be cared for. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

74. He will also supervise the loading of all animal transports. He will require a critical examination to be made of each animal to be embarked and is responsible that only healthy animals are shipped. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

75. He will designate one of his commissioned assistants as meat and dairy inspector for the entire port, who will perform the duties and make reports similar to those of a division meat inspector. The port veterinarian will indorse to the port surgeon with appropriate remarks one copy of the weekly report on Form 110, M. D., and one copy of any special reports from the meat and dairy inspector. Copies of these reports will also be forwarded to the Director of the Veterinary Corps, Office of the Surgeon General, through military channels. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

76. He will prepare requisitions in quadruplicate on Form 35, M. D., for veterinary supplies for the port and transport service, referring three copies to the port surgeon for approval, after which two copies are sent to the officer in charge of the medical supply depot of the port for issue and one forwarded to the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

77. He will report on each animal shipment to the Director of the Veterinary Corps, Office of the Surgeon General. This report when completed will consist of three parts: (*a*) Report of sanitary inspection of the transport before it sailed; (*b*) completed report on Form 113, M. D., which is the transport veterinarian's report; (*c*) report of inspection of the transport on its return to home port. Since the transport veterinarian's report can not be completed until the end of the trip, the report called for in this paragraph will not ordinarily be forwarded until Form 113 has been received and the transport has returned. It will be prepared in duplicate and one copy forwarded through military channels to the Director of the Veterinary Corps, Office of the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

78. He will also prepare monthly reports on Forms 111, M. D., and 47A, M. D., covering all veterinary personnel permanently assigned to the port in duplicate, retaining one copy and forwarding one direct to the Director of the Veterinary Corps, Office of the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

VETERINARY TRANSPORT SERVICE.

79. The transport veterinarian or veterinary officer acting as such will have charge of all veterinary personnel on board and will assign officers and men to appropriate duties. He will utilize the services of casuals as he deems advisable. A veterinary officer commanding a unit or detachment proceeding overseas will, when called on by the transport veterinarian, place the services of all or of any part of his organization at the disposal of the transport veterinarian. When necessary the latter will call on the officer in charge for the assignment of additional men. Under direction of the port veterinarian he will be constantly present during the loading of his transport. He will promptly report to the port veterinarian any animals physically unfit or any defects in sanitary conditions which should be corrected before loading. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

80. The transport veterinarian will have charge of the sanitation of that part of the ship occupied by animals. He will be the veterinary adviser of the officer in charge, and will exercise supervision over the feeding, watering, stabling, grooming, and exercising of the animals; the ventilation, lighting and cleaning of their quarters; and the handling and storage of forage. He will see that all available methods of artificial ventilation are utilized. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

81. He will be responsible for the proper care of all sick or injured animals, and will request their removal to such places as he may consider advisable. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

82. He will closely observe the animals for symptoms of communicable disease, especially glanders. Any case or suspected case of this disease will be immediately destroyed and the stall and fittings thoroughly disinfected. Cases of septic pneumonia will be dealt with in the same manner.

83. He will be responsible for the proper economical use of all veterinary supplies and equipment. On arrival at the home port he will take prompt steps to renew supplies and repair or replace equipment to the end that both may be adequate and serviceable at all times. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

84. He will make a daily sanitary inspection of all animals and their surroundings, and will make prompt recommendations to the officer in charge for the correction of any defects. He will keep a record of his inspections and of the recommendations made to the officer in charge, with the action taken thereon. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

85. When transports return empty every effort will be made to clean, disinfect, and put the quarters to be used by animals in the best possible condition while en route, so that loading may not be delayed after arrival. This work will be supervised by the transport veterinarian, and the officer in charge will furnish the necessary assistance. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

86. Upon returning to the home port he will prepare a report, consisting of Form 113, M. D., completed and accompanied by the record of the daily inspections and the recommendations made to the officer in charge with action thereon, together with any further information or recommendations, he deems advisable. The entire report will be made in triplicate, one copy retained and two furnished the port veterinarian. Should he be an acting transport veterinarian for the trip only and not return with the transport, he will promptly forward his report by mail to the port veterinarian. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

ANIMAL EMBARKATION DEPOTS.

87. The senior veterinary officer assigned to an embarkation depot will be designated as the veterinarian. Under the commanding officer of the depot his duties are the same as those of the veterinarian at an auxiliary remount depot. He will make the same reports and returns, except that one report only will be required weekly on Form 102, M. D. As a detachment commander he is equally responsible for the care, discipline, instruction, equipment, and assignment to duty of all veterinary personnel at the depot. He will prepare requisitions for veterinary supplies in quadruplicate on Form 35, M. D., and forward three copies to the port surgeon for approval, after which two copies are sent to the officer in charge of the medical supply depot at the port for issue and one forwarded to the Surgeon General. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

NOTIFICATION OF COMMUNICABLE DISEASE.

87¼. The veterinarian of any command will promptly notify the State veterinarian, if there is one, of all cases of glanders or other communicable disease occurring in the command of which such authority would take cognizance were the same to occur in the community subject to its supervision. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

VETERINARY SANITARY INSPECTIONS AND REPORTS.

87½. The veterinarian of every mobile unit, camp, depot, post, or command, under the direction of the commanding officer, will supervise the hygiene of public animals and recommend such measures as he may deem necessary to prevent or diminish disease among them. He will examine at least once a month the sanitary condition and suitability of stables, corrals, picket lines, and veterinary hospital buildings and their surroundings; the method of disposal of manure; the bedding; the kind, quality, adequacy, and condition of forage and storage of the same; the water supply and condition of watering places and containers; the methods of feeding and watering; the grooming, including clipping and trimming, the exercise, the shoeing, the fit of saddles, harness, etc., and condition of same, in so far as these matters affect the health and condition of the animals; the disposition of dead animals; the character and cause of prevailing animal diseases and measures taken to prevent them. Immediately after such examination he will report thereon in writing to the commanding officer, noting also in the report the dates on which other veterinary sanitary inspections of the various organizations of the command were made during the month, with such recommendations as he may deem proper. The commanding officer will file the report, noting therein his views and the action taken by him; and should he have deemed the action recommended by the veterinarian impracticable or undesirable he will state fully his objections. The commanding officer will furnish the veterinarian with a copy of his notation in the report. Inspectors general will consult these reports in making inspections. The monthly veterinary sanitary report will be submitted on Form 103, M. D. Any veterinarian having knowledge of insanitary or other conditions which may affect or tend to affect the health of the command will furnish the surgeon with prompt and full information regarding the same. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

SECTION III.—THE VETERINARY SERVICE OF THE THEATER OF OPERATIONS

FUNCTION AND ORGANIZATION.

88. The veterinary service of the American Expeditionary Forces is directed by the chief veterinarian. Its function is to relieve the forces of the encumbrance of incapacitated animals and to prevent and reduce loss and inefficiency among the animals of the Army. The organization is as follows:

CHIEF VETERINARIAN.

89. The chief veterinarian is the adviser of the commander in chief on all matters pertaining to the health and efficiency of the animals of the forces in the field and, subject to the orders of the commander in chief, directs all arrangements in connection with the veterinary service. He will report to the chief surgeon on all matters which in the service of the interior are reported to the Surgeon General. He has charge of the veterinary personnel with the forces and is responsible for its distribution and coordinate working. He is assisted by one or more assistant chief veterinarians (one for each Army and line of communications), and is represented in Army corps by corps veterinarians and in divisions by division veterinarians.

90. The offices of the chief veterinarian and the assistant chief veterinarians will be located. as the commander in chief may from time to time direct.

91. The chief veterinarian or an assistant chief veterinarian will, when necessary, precede the Army to the theater of operations and will make such preparatory veterinary arrangements at the base and line of communications as may be necessary.

92. The chief veterinarian will draft such orders as may be necessary for the veterinary personnel of the force, and will keep such diaries and records in the field as may be required. He communicates directly with his subordinates on all professional matters.

93. He will carry out such inspections and make such recommendations as he may consider necessary pertaining to the health and efficiency of the animals of the forces and will closely supervise the veterinary arrangements.

94. He will take the necessary measures to prevent the retention in the Army of sick or injured animals which are not likely to become serviceable again.

ASSISTANT CHIEF VETERINARIANS.

95. The duties and responsibilities of an assistant chief veterinarian are similar to those of the chief veterinarian, but are confined to that portion of the force to which he is accredited.

CORPS VETERINARIANS.

96. The corps veterinarian will supervise and is responsible for the veterinary service of the Army corps to which he is assigned. His duties are the same as those of the chief veterinarian, but are restricted to his own corps or line of communications.

DIVISION VETERINARIANS.

97. The division veterinarian is the adviser of the division commander on all matters affecting the health and efficiency of the animals of the division and is in charge of the veterinary personnel of the division. He is responsible to the division commander and to the corps veterinarian for the veterinary service of the division.

98. Under the orders of the division commander, and in consultation with the staff and representatives of other services concerned, the division veterinarian will, when necessary, draft paragraphs regarding veterinary matters for inclusion in divisional orders.

99. He will visit the various horse lines and the mobile veterinary section daily and make an inspection of the veterinary service. He will make frequent inspections of the animals of each organization, the sanitary conditions surrounding them, the condition of the forage, the methods of feeding and watering, and any other condition which may affect the health or efficiency of the animals.

100. Every Friday evening he will telegraph to the chief veterinarian a report of the number of animals of the division fit for duty at noon of that day, the number incapacitated, number transferred to hospital, number transferred elsewhere, number remaining under treatment, number missing, number dead, number destroyed, and number received. A report covering the same points and including in addition a statement of the diseases or conditions affecting the incapacitated animals, the sanitary conditions of the horse lines, the condition of the forage, results of mallein tests, and the inspections made by the division meat and dairy inspector will be prepared in triplicate at the same time, and one copy forwarded to the division commander, one to the chief veterinarian, and one to the corps veterinarian.

101. When a communicable disease of a serious nature is reported among the animals of the division, the division veterinarian will make an immediate investigation and see that the necessary action is taken to control and prevent the spread of infection. He will promptly report the occurrence of such disease to the commander of the organization, to the division commander, and to the corps veterinarian.

102. He will arrange with headquarters to be notified in advance of the arrival of, and will have submitted to the mallein test, all public and private animals which join the organizations of the division, and will satisfy himself that they exhibit no signs of communicable disease. He will also arrange to receive notice of all animals about to be transferred and of all captured animals. Captured horses and mules will be given the mallein test and will be carefully examined for symptoms of communicable disease.

103. He will forward to the officer in charge of the advanced medical-supply depot all requisitions for veterinary supplies required by the organizations in the divisions, after carefully examining them and indorsing his recommendations thereon.

104. He will make arrangements for veterinary service for mobile organizations to which no veterinary officers are attached.

VETERINARY OFFICERS ATTACHED TO MOBILE ORGANIZATIONS.

105. Veterinary officers attached to mobile organizations will bear the same relation to the division veterinarian as medical officers similarly assigned bear to the division surgeon under the regulations and the customs of the service.

106. A veterinary officer attached to a mobile organization will see that all sick or injured animals belonging to the unit are properly cared for. He will apply treatment to animals affected with minor ailments which do not interfere with their mobility, and will direct the disposition of all patients returned to duty, destroyed, or transferred to the mobile veterinary section for conveyance to a base hospital, after rendering such aid as may be immediately required. He is responsible that a tag indicating the number of the animal and its organization is securely attached to each animal turned over to the mobile veterinary section. He will also send a report with all animals transferred to the mobile section, showing the number of each animal and its organization, its color, age, and sex, and the condition affecting it.

107. He will make daily inspections of the animals of his organization for symptoms of communicable or other diseases, injuries, evidence of errors in feeding, watering, or stabling, and for faulty shoeing, and make a report of the number of animals fit for duty, the number incapacitated, the causes affecting the latter, the number removed by the mobile veterinary section, and the number of animals joining the organization. Any condition or practice observed which is likely to affect the health or efficiency of the animals will be stated in the report in detail. This report will be made in triplicate and one copy presented to the commanding officer of the unit, one copy forwarded to the division veterinarian, and one retained. When the military situation does not permit of daily inspections, they will be made as often as possible. He will at all times be on the alert to prevent the introduction or spread of communicable disease. He will examine all animals joining the organization and all captured stock. The mallein test will be applied to all captured horses and mules, and also the others when necessary. He will immediately report all cases of communicable disease of a serious character, and all animals exhibiting suspicious symptoms, to the commanding officer of his organization and to the division veterinarian, the latter being notified by telephone or by special orderly.

108. He will make requisition for veterinary supplies through the division veterinarian. These requisitions will be made out in triplicate on Form No. 35, M. D.

109. Veterinary officers must always keep in mind the fact that they are attached to mobile organizations of the Army not so much for the purpose of treating sick and lame animals as they are to keep the animals of their unit in an efficient and serviceable condition. The many duties they must perform to attain this object do not permit of their making a practice of operating, repeatedly dressing injuries and wounds, or giving continuous attention to every sick animal. They must therefore turn over to the mobile veterinary section all sick and lame animals requiring such attention, retaining under treatment in the organization only minor cases. It is absolutely beyond question that very sick or severely injured animals can be more economically treated and more quickly restored to a serviceable condition in base hospitals. In all cases, however, before animals are evacuated to mobile veterinary sections it is important that injuries and wounds receive careful and thorough attention. The early removal of foreign bodies, the prompt cleaning and disinfection of wounds, and proper dressing increase the rapidity of recovery. Care should be taken to guard against the evacuation of animals which are so seriously injured that their cure or restoration to a serviceable condition is very doubtful. Such animals should be immediately destroyed.

110. A simple but effective system of veterinary control and care of sick will be organized by the veterinary officers in mobile organizations. Sick lines will be formed in each organization and all sick or injured animals of the organization will be sent to these lines, where they must remain while they continue in the organization. When an animal is placed on the sick list, it passes under the charge of the veterinary officer and remains in his charge until cured, evacuated, or

until it dies or is destroyed. Veterinary officers are responsible that any animal destroyed by the order of the division veterinarian or on their own instruction is destroyed in their presence.

111. The position of a veterinary officer during action is as follows:

(*a*) Veterinary officer attached to Artillery regiment, with wagon line.

(*b*) Veterinary officer attached to Infantry brigade, with first line transport.

(*c*) Veterinary officer of trains, with headquarters train or as directed by the division veterinarian.

If called to perform any duty elsewhere, he will leave information with his noncommissioned officer in regard to his whereabouts and return to his position as soon as possible after attending to the particular duty.

MEAT INSPECTION.

112. The duties of the veterinary officer assigned to the inspection of the meat of a division in the theater of operations are analogous to those required of the officer holding a similar position in the service of the interior.

MOBILE VETERINARY SECTIONS.

113. Mobile veterinary sections are field units, one being allotted to each division and to each Cavalry brigade.

114. Their function is to take charge of sick and injured animals sent to them and to convey them to a base hospital.

115. Subject to the orders of the division commander, their movements are controlled by the division veterinarian.

116. Sick and injured animals are shipped from the nearest railroad point to a base hospital in a returning supply train. The veterinary officer commanding the mobile section will report to the railroad commandant, who will detail cars for the purpose.

117. A conducting party of one man per car and one noncommissioned officer in charge will be sent with each consignment, every man being provided with a bucket for watering on route.

118. A statement in duplicate showing number of horses transferred will be sent with the conducting party, one copy being signed by the receiving officer and returned as a receipt.

119. All cases will be dressed and attended to previous to dispatch. Particular attention is to be given to the provision of sufficient fodder for the journey and that animals are securely tied.

120. The officer commanding the receiving hospital is responsible for the return of the conducting party without delay. On reaching the railroad the party will travel on the supply column wagons or trucks to refilling point, from thence rejoining sections.

121. On dispatch of each consignment, the officer commanding the mobile veterinary section will notify the division veterinarian and the officer commanding the receiving hospital, giving numbers and date, the latter being notified by wire.

122. In the case of mange, car numbers and initials will be included in these telegrams, and horse covers or blankets will accompany the animals to the hospital.

123. During active operations one or more veterinary collecting stations will be established by the mobile section in the vicinity of the bulk of the animals of the division in action. The situation of such dressing stations will be announced in divisional orders. Wounded or injured animals will be sent direct to the nearest station. During a stationary action veterinary officers attached to mobile organizations will endeavor to organize first-aid dressing stations in their unit and will send all wounded horses, after they have received first aid, in bunches to the collecting station, placing the senior noncommissioned officer in charge of the party with instructions to prevent all straggling and to return with his party at once on completion of his duty. During a moving action veterinary officers will still endeavor to organize a system of evacuating wounded horses and so prevent great and unnecessary straggling. During an action veterinary officers will keep the division veterinarian advised of the animal casualties sustained daily in their organizations.

124. Where deemed desirable by the corps commander, the mobile veterinary sections of the divisions comprising the corps may be combined to form a corps mobile veterinary section.

BASE VETERINARY HOSPITALS.

125. Base veterinary hospitals are stationary organizations located on the lines of communication at such places as circumstances indicate to be advisable. The choice of a site for a base hospital will necessarily be influenced by local conditions, but consideration should be given to

its accessibility to the railroad station or siding at which animals consigned to it would be unloaded, the adequacy of the water supply, and the facilities for obtaining supplies and forage. Advantage should be taken of any available buildings which can be adapted to the requirements of a hospital in providing shelter for sick and debilitated animals. When no buildings are available, the hospital will be constructed according to plans suggested by the chief veterinarian in cooperation with the Quartermaster Corps and approved by the commander in chief.

126. Base hospital accommodation will be provided on a basis of 10 per cent of the animal strength.

127. All sick and injured animals, except those which may be treated in the organization to which they belong or in the mobile veterinary section, will be transferred to a base hospital for treatment, and when cured will be transferred to the nearest remount depot.

128. In all hospitals suitable provision should be made for the proper isolation of animals affected with, or exhibiting symptoms suspicious of, communicable disease. All cases of serious communicable disease will be reported immediately to the assistant chief veterinarian of the line of communications in which the hospital is located, the source of infection being stated.

129. The mallein test will be applied to all animals received at base hospitals as soon as their condition will permit, unless the most advanced base hospital acts as a receiving hospital and the test is made there before the animals are transferred to other hospitals. Individual base hospitals will be used exculsively for cases of a particular kind when this appears to be advisable. The mallein test will again be applied to every animal when it is about to be discharged from the hospital.

130. A record will be kept of each case treated in the hospital. This record will show the number of the animal, the organization to which it belongs, the date of its receipt, condition, previous history, diagnosis, treatment, a daily record of the condition and treatment, date of termination of the case, the date and result of the mallein test, and disposition made of the animal.

131. The senior veterinary officer will give a receipt for animals received at the hospital and will take a receipt for animals turned over to remount depots.

132. The senior veterinary officer will be in charge of the hospital and will be responsible for the sanitary condition of the hospital and of the quarters or localities occupied by the personnel.

133. He will arrange for a systematic disposal, by burning or other methods, of refuse and of carcasses of animals dying in the hospital.

134. He will furnish to the proper officer the reports required by Army Regulations of officers commanding units. He will also telegraph to the chief veterinarian by noon of each day a report of the number of animals admitted, cured, and delivered to remount depot, died, destroyed, condemned and sold, and remaining under treatment. A copy of this telegram will be forwarded to the assistant chief veterinarian of the line of communications on which the hospital is located. Every Friday evening the senior veterinary officer will make up a report for the week covering the same points and in addition giving the diseases or conditions affecting the animals. This report will be made in triplicate, one copy being sent to the chief veterinarian, one to the assistant chief veterinarian of the line of communications on which the hospital is located, and one retained.

VETERINARY CONVALESCENT DEPOTS.

135. One or more veterinary convalescent depots will be located on the line of communications, as circumstances indicate. They are intended for the reception of such cases as require only rest and good feeding.

136. Arrangements for these, whether in open fields or farms, will depend upon climatic conditions, or upon the feasibility of obtaining land suitable for the purpose.

VETERINARY SUPPLIES.

137. A division of veterinary supplies will be maintained in each medical supply depot.

VETERINARY OFFICERS ATTACHED TO FIELD REMOUNT DEPOTS.

138. The duties of veterinary officers attached to field remount depots will be analogous to those laid down for officers holding similar positions in the service of the interior. On all professional matters they will report to the chief veterinarian through the assistant chief veterinarian of the line of communication.

VETERINARY OFFICER IN THE OFFICE OF THE SURGEON, BASE GROUP.

139. An officer of the Veterinary Corps will be stationed in the office of the surgeon, base group, to attend to the correspondence, reports, and other documents relating to the personnel of the Veterinary Corps.

SECTION IV.—SUPPLIES AND MATERIALS.

GENERAL PROVISIONS.

140. The medical and surgical supplies used by the Veterinary Corps are furnished by the Medical Department of the Army. The Medical Department will also furnish necessary restraining devices to control animals in the care of the Veterinary Corps. The greatest care should be exercised to conserve in every way possible all drugs and instruments. In veterinary military practice good stable management, nursing, and surgical cleanliness will save a very large percentage in drugs and dressings.

141. The veterinary supply table gives the medicinal supplies issued to the Army and the quantities and sizes of original packages. As these supplies are selected for the military service, it is presumed that all necessary articles are included, and that the quantities allowed will suffice under ordinary circumstances. Requests for particular medicinal preparations not enumerated in the supply tables will not be approved, nor will preparations of the same drug other than those contained in the table be supplied. The Medical Department will supply from time to time new agents of determined therapeutic value. New remedies which offer, however, no distinct advantage over those already issued will not be supplied.

142. Veterinary officers are requested to communicate freely to the Surgeon General any suggestions tending to the improvement of veterinary supplies, restraining devices, etc., and to make reports as to new designs of apparatus, equipment, etc.

143. In preparing returns, requisitions, invoices, and receipts pertaining to veterinary supplies, the nomenclature, order of entry, classification, and weights and measures of the supply table will be followed. To facilitate the handling of these papers one line of writing only will be placed in each interlinear space.

REQUISITIONS.

The following regulations apply to the service of the interior. Directions in regard to requisitions for veterinary supplies in the field are included in the regulations for the veterinary service in the theater of operation.

144. Annual requisitions for post veterinary supplies will be prepared on Form No. 34, M. D., for the year commencing January 1, unless some other date is designated by the Surgeon General. They will be forwarded not less than 20 days before the beginning of the year to the Surgeon General in triplicate.

145. Articles of which a definite allowance is given in the supply table will be required for in the annual requisitions (except as otherwise provided in par. 154).

146. Only such quantities will be asked for as probably will be needed during the year, computed on the basis of original packages. Fractional parts of a bottle or package will not be asked for. The quantity asked for, plus the quantities on hand, must not exceed those specified in the table for the number of animals most nearly corresponding with those actually at the post or in the command. The quantity of each article on hand will be stated and will be deducted from the quantity allowed annually by the supply table, except that fractional parts of bottles and packages on hand are not so deducted.

147. Before forwarding an annual requisition, it will be carefully examined and compared with the supply table to see that it has been correctly made out in strict accordance with these regulations and to avoid the delay which its return for correction will cause (if they are not complied with).

148. The local prevalence or rarity of certain diseases, as well as the quantity or number on hand of each article, will be considered in the preparation and approval of annual requisitions.

149. A veterinary officer should not ask for an article merely because it is listed. He should request only what there is resaon to think he will need.

150. Special requisitions for post veterinary supplies are annual, quarterly, or emergency. They will be made on Form 35, M. D., but separately from those for field veterinary supplies. They will be forwarded in triplicate to the Surgeon General, as in the case of annual requisitions from the same posts.

151. Except as otherwise provided in paragraph 154, articles not on the supply table which will be needed during the year will be called for on the annual special requisition. The articles will be listed in alphabetical order, and the necessity for them will be fully explained in the column of "Remarks." To avoid delay in filling these requisitions a full description of special articles, instruments, and appliances required will be given in "Remarks," together with a statement of their cost, as ascertained from dealers, catalogs, or other reliable sources of information. When unusual drugs or chemical agents are called for, similar information as to their cost will be furnished.

152. Except as otherwise provided in paragraph 154, articles on the supply table of which no allowance is stated, or which are issued "as required," will be called for on the quarterly special requisition.

(*a*) When supplies are exhausted, or their exhaustion is imminent, a renewal thereof may be asked for on the quarterly special requisitions forwarded during the remainder of the year. These articles should be listed according to the nomenclature, classification, and alphabetical arrangement of the supply table.

(*b*) When quarterly special requisitions are necessary they will ordinarily be forwarded on or before January 1, April 1, July 1, and October 1, for the ensuing three months, respectively. A quarterly requisition may, however, be forwarded at any time during the quarter in which the supplies are needed.

(*c*) When, under these regulations, a quarterly special requisition would be made at the same time as an annual special, it will be consolidated therewith.

153. When, as a result of the prevalence of an epizootic or for any other reason, necessary supplies are likely to be exhausted before the next quarterly special requisition is to be made, they will be called for on an emergency requisition, Form No. 35, M. D., forwarded at once to the Surgeon General upon the development of the deficiency, with a full explanation of the emergency and its cause. In extreme cases application should be made by telegraph to the Surgeon General, or in the Philippine Department, Hawaiian Department, or Panama Canal Department to the department surgeon for the supplies needed to meet the emergency, which will be followed by a letter of explanation. Veterinarians will be held accountable for any suffering which may result from their failure to require for supplies when it is evident the same will be needed.

(*a*) The frequent rendition of emergency post requisitions would usually argue a want of reasonable foresight in requiring for supplies, or a want of proper economy in the use of hospital property, and it would be a reproach to veterinary administration. If due care in the use of veterinary property is exercised, and the regulations herein made for the timely preparation of annual and quarterly requisitions are observed, it will seldom be necessary to resort to the emergency or telegraphic requisition.

154. The following rules will be observed:

(*a*) Articles required to replace unserviceable property, whether on the supply table or not, will be required for on the quarterly special requisition. The exact number and condition of the unserviceable articles on hand will be expressly stated in "Remarks."

(*b*) Requisitions for mineral oil, coal, gas, and electric current for operating sterilizers, X-ray machines, and other therapeutic apparatus will be addressed to the Surgeon General, or, in the Philippine, Hawaiian, or Panama Canal Departments to the department surgeon.

(*c*) Supplies for a subpost or camp will, in the absence of orders to the contrary, be required for quarterly upon the veterinarian of the main post or command.

155. Rescinded. (*S. R. No. 70, C. No. 1, July 5, 1918.*)

SECTION V.—NOMENCLATURE OF DISEASES AND RULES FOR RECORDING DISABILITIES OF ANIMALS.

156. Diseases and injuries will, so far as practicable, be recorded in reports in accordance with the following table of diagnostic terms. The table will serve as a guide in this regard, but it is not intended that it shall be followed literally. When diseases or injuries occur for which no terms are furnished by the table, or for which the terms furnished are general in character, they will be recorded under such scientific terms commonly applied to them by the veterinary profession as will briefly and accurately describe them.

(*a*) The letter L in parenthesis following a term indicates that the *location* of the disability must be recorded; the letter C, its *cause;* and the letter V, its *variety.*

DIAGNOSTIC TERMS.

Abortion.
Abscess (L. C.).
Acne.
Actinomycosis.
Adenoma (L.).
African horse sickness.
Alopecia.
Amaurosis (C.).
Amblyopia.
Anemia, infectious ("swamp fever").
Anemia.
Angioma (L.).
Ankyloblepharon.
Ankylosis (L. C.).
Anthrax.
Aphagia.
Apoplexy (hemorrhage into brain).
Arthritis (L. C. V.).
Ascaris megalocephala.
Ascites (C.)
Aspergillosis.
Atrophy of (L. C.).
Autointoxication.
Axoturia.
Balanitis.
Bladder, urinary, eversion of.
Bladder, rupture of.
Blepharitis.
Blepharospasm.
Borna's disease (infectious meningo-encephalitis).
Bronchiectasis.
Bronchitis (V.).
Broncho-pneumonia.
Bursitis (L. C. V.).
Calcification of cartilage (L.).
Calculus (L.).
Canker.
Carcinoma (L.).
Cardiac disorder, functional.
Cardiac hypertrophy.
Cardiac hypertrophy and dilatation.
Cardiac murmurs, not organic.
Cardiac murmurs, organic.
Cardiac palpitation ("thumps").
Caries dentium.
Cataract.
Cellulitis (L. C. V.).
Cestode infection (tapeworm).
Chalazion.
Cholelithiasis.
Chondroma (L.).
Chorea.
Choroidal tumor.
Choroiditis.
Cicatrices of (L. C.).
Cicatricial deformity (L. C.).
Cleft palate.
Coital exanthema.
Colic, embolic.
Colic, spasmodic.
Colic, worm.
Condyloma acuminatum (warts, external genital organs).
Conical cornea.
Conjunctivitis, catarrhal.
Conjunctivitis, chemical.
Conjunctivitis, granular.
Conjunctivitis, purulent.
Conjunctivitis, traumatic.
Constipation, cause not determined or when secondary diagnosis.
Contracture of (muscle, fascia, tendon, or sheath) (L. C.).
Corns (poderdermatitis circumscripta).
Cornua (cutaneous horns).
Cowperitis.
Crural paralysis.
Curb.
Cryptorchidism.
Cystitis.
Cyst (L.).
Cystic kidney.
Cysticercus (L.).
Dacryoadenitis.
Dacryocystitis.
Decubitus.
Dental disease (abnormalities of the teeth).
Dermatitis (L. C. V.).
Dermatitis, contagiosa pustulosa.
Dermatitis, medicamentosa (drug eruptions).
Dermatitis, verrucosa ("general heel").
Dermoid cyst (L.).
Detachment of choroid.
Detachment of retina.
Deviation of nasal septum.
Diabetes insipidus.
Diabetes mellitus.
Diaphragm, spasm of ("thumps").
Diarrhea, cause not determined or when secondary diagnosis.
Echinococcus.
Ectropion.
Eczema seborrhoeicum.
Edema (L. C.).
Elephantiasis.
Embolism (L.).
Emphysema (L.).
Enchondroma.
Endocarditis, acute (give primary disease).
Endocarditis, chronic.
Endothelioma (L.).
Enteritis (C. V.).
Enteritis membranica (mucous colitis).
Entropion.

Epididymitis (C. V.).
Epididymo-orchitis (C. V.).
Epilepsy.
Epistaxis.
Epithelioma (L.).
Erysipelas (L.).
Esophagus, diverticula.
Esophagus, spasm of.
Exostoses (L.).
Extravasation of urine.
Facial paralysis.
Favus.
Fibroma (L.).
Filariasis.
Fistula, dental.
Fistula, fecal.
Fistula, ear.
Fistula, poll.
Fistula, withers.
Foot-and-mouth disease.
Forage poisoning ("cerebrospinal meningitis").
Foreign body in (L. V.).
Gangrene (L.).
Gastritis (C. V.).
Gastro-enteritis (C. V.).
Gingivitis.
Glanders.
Glossitis.
Goiter.
Gonitis.
"Grease heel."
Gutteral pouch catarrh.
Gutteral pouch tympany.
Hematoma (L.).
Hematuria.
Hemiplegia (C.).
Hemoglobinuria.
Hemopericardium.
Hemophilia.
Hemorrhage (L.).
Hemorrhagic septicemia.
Hemorrhoids (V.).
Hemothorax.
Hermaphroditism.
Hernia (L. V.).
Hernia of muscle (L. V.).
Hernia, strangulated, (L.).
Herpes tonsurans.
Hordeolum.
Hydrocele.
Hydrocephalus, acquired.
Hydronephrosis.
Hyperidrosis.
Hypertrophy (L.).
Hypopyon.
Ichthyosis.
Impotence.
Incontinence of urine.
Infarct (L. C.).
Infection of operation wound.
Influenza.
Intestinal catarrh.
Intestinal impaction.
Intestinal impaction with displacement (angulations, kinks, adhesions, volvulus, intussusception).
Intestinal rupture (L.).
Intestinal toxemia (fermentation).
Iridocyclitis.
Iritis.
Jaundice (C.).
Joint, luxation of (L.).
Keratitis superficialis.
Keratitis, nonulcerative.
Keratitis, parenchymatous.
Keratitis, phlyctenular.
Keratitis, ulcerative.
Keratoderma.
Lachrymal obstruction.
Lagophthalmos.
Laminitis.
Laryngeal paralysis ("roaring").
Laryngitis (V.).
Laryngitis, croupous.
Laryngitis, phlegmonous, acute.
Larynx, edema of.
Leptomeningitis.
Leucoma.
Lipoma (L.).
Loose bodies in joint (L. V.).
Lymphangitis (L. C. V.).
Lymphangitis, epizootic.
Lymphangitis, ulcerous.
Lymphosarcoma (L.).
Mange [1] (V.).
Mange, pseudo from forage acarini.
Mange, suspected.
Malignant edema.
Malingering.
Malnutrition.
Melanoma.
Melanosarcoma.
Meningo-encephalitis.
Meningitis spinalis.
Meteorism (C.).
Metritis.
Monorchism.
Muscular rheumatism (L. V.).
Myelitis (L. C. V.).
Myocarditis (V.).
Myoma (L.).
Myopia.

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[1] Must always be confirmed by microscopic examination.

Myositis (L. V.).
Myxedema.
Nail in the foot (report as "picked up nail") (L.).
Nasal polypus.
Navicular disease (podotrochlearis).
Necrosis (L. C.).
Nephritis (C. V.).
Neuritis (optic).
Nystagmus.
Obesity.
Omphalitis.
Onanism.
Opacity of vitreous.
Ophthalmia, periodic.
Optic atrophy.
Orchitis.
Osteoma (L.).
Osteoporosis.
Ostitis (L.).
Otitis.
Oxyuris curvula.
Pachymeningitis (L. C.).
Panophthalmitis.
Papilloma (L.).
Paralysis of —— muscle (L.).
Paraphimosis.
Paraplegia (C.).
Parotitis.
Pediculosis.
Pemphigus.
Penetrating street nail (report as "picked up nail") (L.).
Perforated nasal septum.
Pericariditis (V.).
Perichronditis (C.).
Periorchitis.
Periostitis (L.).
Peritoneal adhesions.
Peritonitis (V.).
Pharyngitis.
Pharynx, phlegmonous infection, acute.
Phimosis.
Phlebitis (L. C. V.).
Phlegmona diffusa.
Phthiriasis (pediculosis; lice).
Picked-up nail.
Piroplasmosis (biliary fever).
Pleurisy, fibrinous.
Pleurisy, serofibrinous.
Pleurisy, suppurative.
Pleuritic adhesions.
Pneumonia, foreign body (traumatic pneumonia).
Pneumonia, infectious fibrinous (contagious pneumonia).
Pneumonia, interstitial.
Pneumonia, lobar.
Pneumonia, unclassified.
Pneumopericardium.
Pneumothorax.
Pododermatitis (C. V.).
Poisoning (C.).
Polypus, nasal.
Priapism.
Proctitis.
Prostatis.
Pruritus.
Pterygium.
Ptosis.
Pulmonary congestion.
Pulmonary edema.
Purpura hemorrhagica (petechial fever).
Pyaemia (C.).
Pyelitis.
Pyelonephritis.
Pyopneumothorax.
Quittor.
Rabies.
Radial paralysis.
Rectum, prolapse of.
Retention cyst (L.).
Retention of urine.
Retinitis (V.).
Retrobulbarneuritis.
Rhinitis, acute.
Rhinitis, croupous.
Rickets.
Ringbone.
"Roaring" (laryngeal paralysis).
Sandcracks.
Sapremia.
Sarcoma (L.).
Satyriasis.
Scabies.
Scirrhous cord.
Screw worm (compsomina macellaria larvae).
Seasickness.
Seedy toe.
Septicemia.
Shock.
Sidebone.
Sinus, empyema (L.).
Splints.
Spavin (V.).
Sprains (L.).
Sporotrichosis.
Staphyloma of cornea.
Stenosis (L. C.).
Stomach, acute dilatation of.
Stomach, dilatation of.
Stomach, rupture of.
Stomatitis, aphthous.
Stomatitis, catarrhal.
Stomatitis, contagious.
Stomatitis, mercurial.
Stomatitis, ulcerative.

Strangles.
Stricture (L. C.).
Strongyloides, intestinal.
Subscapular paralysis ("Shoulder slip").
Symblepharon.
Synechia.
Synovitis of (L. C. V.).
Tendinitis.
Tendovaginitis.
Tetanus.
Thoroughpin.
Thrombosis (L.).
Thrush.
Ticks.
Trichorrhexis nodosa.
Trypanosomiasis.
Tuberculosis (L.).
Tumor, benign (L. V.).
Tumor, brain.
Tumor, malignant (L. V.).
Tumor, spinal cord.
Ulcer, (L. C. V.).
Under observation (undiagnosed or unknown).
Union of fracture faulty.
Uremia.
Urethra, stricture of.
Urticaria.
Uterus, rupture of.
Vaccinia (cowpox).
Vagina, rupture of.
Valvular, heart disease (V.).
Varicocele.
Varicose veins (L.).
Variola, equine.
Verruca (wart).
Vertigo.

Traumatisms.

Abrasion (L. C.).
Bite.
Blister (L. C.).
Burn (L. C. V.).
Burn, chemical (L. C. V.).
Burn, collar chain.
Burn, rope.
Burn, X-ray.
Castration.
Cataract, traumatic.
Compression.
Concussion (L. C.).
Conjunctivitis, traumatic.
Cornea, foreign body in.
Crushing (L. C.).
Deprivation of water.
Dermatitis traumatica.
Dislocation (L. C. V.).
Drowning.
Electrical shock.
Electrical burn.
Emphysema, traumatic (L.).
Epiphyseal separation (state bone).
Exhaustion from overexertion.
Exhaustion from overexposure.
Exposure to extreme cold.
Eye, traumatic rupture of.
Eye, other wounds and injuries of (C.).
Foreign body, traumatic (L.).
Fracture, comminuted (L. C.).
Fracture, compound (L. C.).
Fracture, simple (L. C.).
Fracture of ———, faulty union following.
Gall, crupper.
Gall, girth.
Gall, halter.
Gall, harness.
Gall, saddle.
Gassed.
Gunshot wound (L.).
Hematona, traumatic (L.).
Hemorrhage (L. C.).
Heart rupture (C.).
Heat stroke.
Infection of wound.
Interfering.
Lightning stroke.
Myelitis, traumatic.
Overreach.
Poisoning by food (specify food).
Poisoning, other, acute.
Prolapse of iris.
Rupture of organ (L. C.).
Scratches.
Smoke inhalation.
Sprain of joint (L.).
Speedy cut.
Starvation.
Strain (state muscle).
Strangulation.
Suffocation.
Sunstroke.
Synovitis, traumatic (L. C.).
Traumatic neuritis.
Treads, calk.
Urinary calculus.
Venomous bite or sting.
Wound, contused (L. C.).
Wound, extensive.
Wound, incised (L. C.).
Wound, lacerated (L. C.).
Wound, multiple.
Wound, penetrating (L. C.) (except picked up nail).
Wound, perforating (L. C.).

(*S. R. No. 70, C. No. 1, July 5, 1918.*)

MANUAL FOR THE MEDICAL DEPARTMENT.

ARTICLE I.—THE MEDICAL DEPARTMENT, ITS ORGANIZATION AND PERSONNEL.

Organization.

1. The Medical Department, under the act of Congress approved April 23, 1908 (35 Stats. 66; G. O. 67, 1908), as modified by the act of March 3, 1911 (36 Stats. 1054; G. O. 45, 1911), establishing the Dental Corps, consists of the Medical Corps, the Medical Reserve Corps, the Dental Corps, the Hospital Corps, and the Nurse Corps, to which may be added the contract surgeons employed by virtue of the provisions of the act of February 2, 1901 (31 Stats. 752; G. O. 9, 1901), and other civilians employed from time to time under the authority of the annual appropriation acts. The general duties of the department are pointed out in Army Regulations.

Medical Corps.

2. Extract from the act of April 23, 1908 (35 Stats. 66):

SEC. 2. That the Medical Corps shall consist of one Surgeon General, with rank of brigadier general, who shall be chief of the Medical Department; fourteen colonels, twenty-four lieutenant colonels, one hundred and five majors, and three hundred captains or first lieutenants, who shall have rank, pay, and allowances of officers of corresponding grades in the Cavalry arm of the service. Immediately following the approval of this act all officers of the Medical Department then in active service, other than the Surgeon General, shall be recommissioned in the corresponding grades in the Medical Corps established by this act in the order of their seniority and without loss of relative rank in the Army as follows: Assistant surgeons general, with the rank of colonel, as colonels; deputy surgeons general, with the rank of lieutenant colonel, as lieutenant colonels; surgeons with the rank of major, as majors; assistant surgeons, who at the time of the approval of this act shall have served three years or more, as captains; and assistant surgeons, with the rank of first lieutenant, who at the time of the approval of this act shall have served less than three years as such, as first lieutenants; and hereafter first lieutenants shall be promoted to the grade of captain after three years' service in the Medical Corps.

SEC. 3. That promotions in the Medical Corps to fill vacancies in the several grades created or caused by this act, or hereafter occurring, shall be made according to seniority, but all such promotions and all appointments to the grade of first lieutenant in said corps shall be subject to examination as hereinafter provided: *Provided*, That the increase in grades of colonel, lieutenant colonel, and major provided for in this act shall be filled by promotion each calendar year of not exceeding two lieutenant colonels to be colonels, three majors to be lieutenant colonels, fourteen captains to be majors, and of the increase in the grade of first lieutenant not more than twenty-five per centum of the total of such increase shall be appointed in any one calendar year: *Provided further*, That those assistant surgeons who at the time of the approval of this act shall have attained their captaincy by reason of service in the volunteer forces under the provisions of the act of February second, nineteen hundred and one, section eighteen, or who will receive their captaincy upon the approval of this act by virtue of such service, shall take rank among the officers in or subsequently promoted to that grade, according to date of entrance into the Medical Department of the Army as commissioned officers.

SEC. 4. That no person shall receive an appointment as first lieutenant in the Medical Corps unless he shall have been examined and approved by an Army medical board consisting of not less than three officers of the Medical Corps designated by the Secretary of War.

SEC. 5. That no officer of the Medical Corps below the rank of lieutenant colonel shall be promoted therein until he shall have successfully passed an examination before an Army medical board consisting of not less than three officers of the Medical Corps, to be designated by the Secretary of War, such examination to be prescribed by the Secretary of War and to be held at such time anterior to the accruing of the right to promotion as may be for the best interests of the service: *Provided*, That should any officer of the Medical Corps fail in his physical examination and be found incapacitated for service by reason of physical disability contracted in the line of duty, he shall be retired with the rank to which his seniority entitled him to be promoted; but if he should be found disqualified for promotion for any other reason, a second examination shall not be allowed, but the Secretary of War shall appoint a board of review to consist of three officers of the Medical Corps superior in rank to the officer examined, none of whom shall have served as a member of the board which examined him. If the unfavorable finding of the examining board is concurred in by the board of review, the officer reported disqualified for promotion shall, if a first lieutenant or captain, be honorably discharged from the service with one year's pay; and, if a major, shall be debarred from promotion and the officer next in rank found qualified shall be promoted to the vacancy. If the action of the examining board is disapproved by the board of review, the officer shall be considered qualified and shall be promoted.

SEC. 6. That nothing in this act shall be construed to legislate out of the service any officer now in the Medical Department of the Army, nor to affect the relative rank or promotion of any medical officer now in the service, or who may hereafter be appointed therein, as determined by the date of his appointment or commission, except as herein otherwise provided in section three.

(*a*) Section 5 above was modified by the proviso in the act of March 3, 1909, reading as follows (35 Stats. 737):

Provided, That any major of the Medical Corps on the active list of the Army who, at his first examination for promotion to the grade of lieutenant colonel in said corps, has been or shall hereafter be found disqualified for such promotion for any reason other than physical disability incurred in the line of duty, shall be suspended from promotion and his right thereto shall pass successively to such officers next below him in rank in said corps as are or may become eligible to promotion under existing law during the period of his suspension; and any officer suspended from promotion, as hereinbefore provided, shall be reexamined as soon as practicable after the expiration of one year from the date of the completion of the examination that resulted in his suspension; and if on such reexamination he is found qualified for promotion, he shall again become eligible thereto; but if he is found disqualified by reason of physical disability incurred in line of duty, he shall be retired, with the rank to which his seniority entitles him to be promoted; and if he is not found disqualified by reason of such physical disability, but is found disqualified for promotion for any other reason, he shall be retired without promotion.

3. An applicant for appointment in the Medical Corps of the Army must be between 22 and 30 years of age at the time of taking the preliminary examination, must be a citizen of the United States, must have a satisfactory general education, must be a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and must have had at least one year's hospital training, including practical experience in the practice of medicine, surgery, and obstetrics.

(*a*) Appointments to the Medical Corps are made by the President, upon the recommendation of the Surgeon General, after the applicants have passed the prescribed examination. The examination will consist of two parts—a preliminary examination and a final or qualifying examination, with a course of instruction at the Army Medical School intervening.

(*b*) Permission to appear for examination should be applied for by letter to The Adjutant General of the Army. The application must be wholly in the handwriting of the applicant, must give the place and date of his birth, must indicate the place and State or Territory of which he is a permanent resident, and must inclose certificates, based upon personal acquaintance, from at least two reputable persons as to his citizenship, character, and habits. Should his original application reveal any disqualification he will be so advised. Should no disqualification be disclosed he will be given an opportunity to complete his application by filing his personal history. Should this indicate no disqualification he will in due season be formally invited to appear before the local board (par. 4) at the point most convenient for him, and a date will be fixed for his appearance.

(*c*) No allowances will be made for the expenses of applicants undergoing preliminary examinations.

4. The preliminary examinations will be conducted, under instructions from the Surgeon General, by local boards of one or more medical officers, and by a central board of not less than three, which shall be known as the Army Medical Board.

(*a*) Local boards will be convened at the larger military posts as occasion requires. Permanent local boards also will be established from time to time where deemed necessary.

5. Each applicant, upon presenting himself to the local board, will, prior to his physical examination, be required to submit the diploma conferring upon him the degree of doctor of medicine, and to sign the following certificate:

I certify, to the best of my knowledge and belief, that I am not affected with any form of disease or disability which will interfere with the performance of the duties of the office for appointment to which I am about to undergo examination.

If he fails to submit his diploma, or declines to give the certificate, the examination will not proceed.

(*a*) *Physical examination.*—If he submits his diploma and gives the prescribed certificate, the board will then proceed with his physical examination, which will conform in all respects to that required of candidates from civil life for commission in the line of the Army, except in respect to vision, the minimum requirements of which are fixed from time to time in general orders. (See Appendix: *Physical Examinations.*)

The physical examination will be made complete in each case, even though a disqualification be discovered, so as to ascertain whether any other disqualifications exist. If the board finds one or more disqualifications which, in its opinion, are permanent, it will reject the applicant and not proceed with the mental examinations. It is highly desirable that when an applicant is rejected for physical disqualification the cause or causes of rejection should be so clearly established as to be conclusive of the reasonableness and propriety of the rejection. Should the board have a doubt as to the permanency of the disqualification, it may require appropriate additional testimony concerning the same, and such evidence as may be obtainable bearing on the medical history of the applicant and of his family. Should the board find one or more physical disqualifications which in its opinion are temporary in nature and such as may be overcome by the time the applicant, if otherwise acceptable, would be ordered to attend the Army Medical School, it may proceed with the mental examinations, if the applicant so desires, upon the understanding that he shall present himself at a time and place to be designated by the Surgeon General for a second physical examination and upon the condition that his acceptance as a candidate shall be subject in all respects to his qualifying at the second physical examination. In reporting the physical examination in such case the reasons which led the board to consider the disqualifications temporary and influenced it to continue the examination notwithstanding the same will be fully set forth in its report. The physical examination will be reported on the form provided for the purpose.

(*b*) The applicant having been found physically qualified, or the physical disqualifications found being only temporary as provided in the preceding section, the board will next proceed with the mental examinations, which will be in writing, as follows:

General education.—This examination may be omitted at the discretion of the Surgeon General in the case of applicants holding diplomas or certificates from reputable literary or scientific colleges, normal schools or high schools, or of graduates of medical schools which require an entrance examination satisfactory to the Surgeon General. When held it will cover mathematics (arithmetic, algebra, and plane geometry), geography, history (especially of the United States), general literature, Latin grammar, and the reading of easy Latin prose. Questions in these subjects will be sent from the Surgeon General's Office if examination therein is required.

Professional education.—This will be in the following subjects, upon questions supplied to the board from the Surgeon General's Office: Anatomy, physiology and histology, chemistry and physics, materia medica and therapeutics, surgery, practice of medicine, obstetrics, and gynecology.

(*c*) Upon the conclusion of the examination the local board will return the applicant's diploma to him.

(*d*) The local board will report its proceedings on the form provided therefor direct to the Surgeon General, noting thereon its opinion of the applicant's aptitude for the service as good, fair, or poor. It will forward therewith without marking them the questions and answers in the mental examinations.

6. The favorable findings of the local board as to an applicant's physical qualifications, its opinion as to his aptitude for the service, and the questions and answers in his mental examinations will be referred by the Surgeon General to the Army Medical Board, which will mark the applicant's questions and answers proportionately to their relative value in each class, will rate his aptitude for the service, and will make final report to the Surgeon General as to his qualifications. Proficiency in English grammar, orthography, and composition will be determined from the applicant's examination papers. An applicant who in the opinion of the Army Medical Board is physically disqualified will be rejected on that ground, notwithstanding the favorable findings of the local board. An applicant who is deficient in English grammar, orthography, and composition will be rejected. An applicant who has been examined as to his general education and fails to make a general average therein of 75 per cent will be rejected. An applicant who has been found physically qualified, and whose general education and English grammar, orthography, and composition have been found satisfactory, and who makes a general average of 80 per cent in his professional examination and in aptitude, will be reported as qualified; the board may, however, reject any candidate who fails to make 65 per cent in any professional subject.

7. An applicant failing in one preliminary examination may be allowed another after the expiration of one year, but not a third. Withdrawal from examination during its progress, except because of sickness, will be deemed a failure.

8. Qualified applicants will be appointed to the Medical Reserve Corps with the rank of first lieutenant, and upon pledging themselves to accept a commission in the Medical Corps, if found qualified in the final examination, and to serve at least five years thereunder, unless sooner discharged, will be ordered to the Army Medical School, Washington, D. C., for instruction as candidates for admission to the Medical Corps of the Army. If, however, a greater number of applicants qualify than can be accommodated at the school, the requisite number will be selected according to their relative standing as marked by the Army Medical Board.

(*a*) Qualified candidates ordered to the school receive the pay and allowances of a first lieutenant for the journey from their homes to Washington, and while on duty at the school.

9. The *final* or *qualifying examination* of graduate candidates for appointment in the Medical Corps will be held by the Army Medical Board (par. 4) immediately after the close of the term of the Army Medical School. It will cover the following points; First, the candidate's physical qualifications; second, his clinical skill and acumen; and, third, his general aptitude for the service.

(*a*) The physical examination will be thorough. If it reveals a permanent incapacity for active military service, the candidate will be relieved from active duty and his discharge from the service recommended. If it reveals an incapacity curable within a brief period, the candidate will be regarded as physically qualified, and the clinical examination will be proceeded with. The question whether the incapacity is permanent or curable is one for the examining board to determine. In case of doubt the examination will be discontinued, and the candidate relieved from active duty to afford him an opportunity to effect a cure. A candidate relieved from active duty for this purpose may, upon the recommendation of the Surgeon General, be called into active service the following year, for final examination with the next class of candidates. Should he then be found physically incapacitated he will be again relieved from active duty and his discharge from the service recommended.

(*b*) The candidate having been found physically qualified, the board will then proceed with his clinical examination and the inquiry into his general aptitude, giving him appropriate ratings under each head conformably to instructions from the Surgeon General.

(*c*) Graduate candidates who are found physically qualified and who obtain a general average of 80 per cent in their preliminary professional examination, in their course at the Army Medical School, in their clinical examination, and in their general aptitude will be eligible for appointment in the Medical Corps.

(*d*) Eligible candidates may, if they so desire, take a special examination in ancient or modern languages, higher mathematics, or scientific branches other than medical. Proficiency therein will be rated by the board conformably to instructions from the Surgeon General.

(*e*) The relative standing for appointment of eligible candidates will be determined by the total number of points obtained in the preliminary professional examination, in the school, in the clinical examination, in general aptitude, and in the special examination, if one is taken.

(*f*) Eligible candidates who fail to receive appointments because of lack of vacancies at the time of qualification may receive them in the order of their standing as vacancies occur before the graduation of the next class. Thereafter they shall not be eligible for appointment in the Medical Corps, but will be preferred for selection for volunteer commissions and for active duty in the Medical Reserve Corps.

EXAMINATION FOR PROMOTION.

(See par. 2, sec. 5.)

10. Regulations governing the examination of officers of the Army for promotion are published by the War Department from time to time in general orders. (See Appendix: *Officers.*)

11. Before proceeding with the physical examination for the promotion of a medical officer, the officer about to be examined will be required to submit, for the information of the examining board, a certificate as to his physical condition. If he knows of no physical disqualification existing, the certificate will take the following form:

> I certify, to the best of my knowledge and belief, that I am not affected with any form of disease or disability which will interfere with the performance of the duties of the grade for promotion to which I am about to undergo examination.

(*a*) The certificate called for in this paragraph will be attached to the proceedings of the board.

PERSONAL REPORTS.

12. The personal reports made to the Surgeon General in compliance with Army Regulations by officers of the Medical Corps at independent posts and stations will be forwarded direct. In other cases they will be made in duplicate and forwarded to the department surgeon who will send the original without delay to the Surgeon General and retain the carbon copy for his own records.

13. Officers of the Medical Corps will immediately upon any change in their stations, status, or duties, report the same to the Surgeon General, stating the authority therefor, with the number, date, and source of the order making the change. These reports will be made and forwarded as in the preceding paragraph.

Medical Reserve Corps.

14. Extract from the act of April 23, 1908 (35 Stats. 68):

SEC. 7. That for the purpose of securing a reserve corps of medical officers available for military service, the President of the United States is authorized to issue commissions as first lieutenants therein to such graduates of reputable schools of medicine, citizens of the United States, as shall from time to time, upon examination to be prescribed by the Secretary of War, be found physically, mentally, and morally qualified to hold such commissions, the persons so commissioned to constitute and be known as the Medical Reserve Corps. The commissions so given shall confer upon the holders all the authority, rights, and privileges of commissioned officers of the like grade in the Medical Corps of the United States Army, except promotions, but only when called into active duty, as hereinafter provided, and during the period of such active duty. Officers of the Medical Reserve Corps shall have rank in said corps according to date of their commissions therein, and when employed on active duty, as hereinafter provided, shall rank next below all other officers of like grade in the United States Army: *Provided*, That contract surgeons now in the military service who receive the favorable recommendation of the Surgeon General of the Army shall be eligible for appointment in said reserve corps without further examination: *Provided further*, That any contract surgeon not over twenty-seven years of age at date of his appointment as contract surgeon shall be eligible to appointment in the regular corps.

SEC. 8. That in emergencies the Secretary of War may order officers of the Medical Reserve Corps to active duty in the service of the United States in such numbers as the public interests may require, and may relieve them from such duty when their services are no longer necessary: *Provided*, That nothing in this act shall be construed as authorizing an officer of the Medical Reserve Corps to be ordered upon active duty as herein provided who is unwilling to accept such service, nor to prohibit an officer of the Medical Reserve Corps not designated for active duty from service with the militia, or with the volunteer troops of the United States, or in the service of the United States in any other capacity, but when so serving with the militia or with volunteer troops, or when employed in the service of the United States in any other capacity, an officer of the Medical Reserve Corps shall not be subject to call for duty under the terms of this section: *And provided further*, That the President is authorized to honorably discharge from the Medical Reserve Corps any officer thereof whose services are no longer required: *And provided further*, That officers of the Medical Reserve Corps who apply for appointment in the Medical Corps of the Army may, upon the recommendation of the Surgeon General, be placed on active duty by the Secretary of War and ordered to the Army Medical School for instruction and further examination to determine their fitness for commission in the Medical Corps: *And provided further*, That any officer of the Medical Reserve Corps who is subject to call and who shall be ordered upon active duty as herein provided and who shall be unwilling and refuse to accept such service shall forfeit his commission.

SEC. 9. That officers of the Medical Reserve Corps when called upon active duty in the service of the United States, as provided in section eight of this act, shall be subject to the laws, regulations, and orders for the government of the Regular Army, and during the period of such service shall be entitled to the pay and allowances of first lieutenants of the Medical Corps with increase for length of service now allowed by law, said increase to be computed only for time of active duty: *Provided*, That no officer of the Medical Reserve Corps shall be entitled to retirement or retirement pay, nor shall he be entitled to pension except for physical disability incurred in the line of duty while in active duty: *And provided further*, That nothing in this act shall be construed to prevent the appointment in time of war of medical officers of volunteers in such numbers and with such rank and pay as may be provided by law.

15. An applicant for appointment in the Medical Reserve Corps must be betwen 22 and 45 years of age, must be a citizen of the United States, must be a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and must have qualified to practice medicine in the State or Territory in which he resides.

(*a*) Appointments in this corps are made by the President upon the recommendation of the Surgeon General after the applicants have passed the prescribed examinations. Permission to appear for examination is obtained by application to The Adjutant General of the Army similar to that required in the case of applicants for appointment in the Medical Corps (par. 3*b*). Should his original application reveal any disqualification, the applicant will be so advised. Should none be disclosed, he will be given an opportunity to complete his application by filing his personal history, accompanied by a certificate from the proper State or local official that the applicant is duly qualified to practice medicine in the State or Territory where he resides. Should his personal history indicate no disqualification, he will in due season be formally invited to appear before the examining board at the place most convenient for him. No allowances will be made for the expenses of applicants undergoing examination.

16. The examination will be conducted, under instructions from the Surgeon General, by boards of one or more officers of the Medical Corps convened from time to time, as required, at military posts or stations.

(*a*) Upon presenting himself to the board the applicant will be required to submit the diploma conferring upon him the degree of doctor of medicine and to give a certificate similar to that prescribed in the case of applicants for appointment in the Medical Corps (par. 5). If he fails to submit his diploma or declines to give the certificate the examination will not proceed.

(*b*) The diploma having been submitted and the certificate given, the board will then make a thorough physical examination of the applicant, which must conform in all respects to that required of candidates for commission in the Medical Corps (par. 5*a*). If any physical disqualification for the service is found the examination will be discontinued. The findings and action of the board will be reported on the form provided for the purpose.

(*c*) The applicant having been found physically qualified, the board will next proceed with his professional examination in the following subjects: Practice of medicine, surgery, obstetrics and gynecology, and hygiene. This examination will be oral and sufficiently comprehensive to determine whether, in the opinion of the board, the applicant is qualified to practice his profession under the usual conditions of the military service. Should the oral examination in any subject be unsatisfactory, the applicant may be required to take a written examination therein.

(*d*) Upon the conclusion of the examination the board will return the applicant's diploma to him. The proceedings of the board will be reported direct to the Surgeon General.

17. An officer of the Medical Reserve Corps assigned to active duty in the service of the United States will immediately upon arrival at his first station be subjected to a critical physical examination by a board of one or more medical officers constituted for the purpose, if such board is available. If no such board is available at the station to which he is assigned, he will be ordered to report to the nearest medical officer for examination before proceeding to his station. Upon presenting himself to the board the officer will be required to give a certificate identical with that required of candidates for commission in the Medical Corps (par. 5). The certificate having been given, the board will then proceed with the physical examination, which will conform to that prescribed in paragraph 5*a*, and be made complete, even though a physical disqualification be discovered, so as to ascertain for record whether any other physical disqualifications or defects exist. The examination will be reported to the Surgeon General upon the form provided therefor, noting thereon in full the disqualifications or defects found and the board's recommendation whether the officer shall be continued on active duty or shall be forthwith relieved.

(*a*) Upon relief from active duty (except in the case of an officer forthwith relieved for disqualification found at the examination immediately following his assignment to active duty) the officer will again be subjected to a critical physical examination by a similar board, to which will be referred the report of the physical examination made when the officer was called into active service. The examination upon relief will be completed in all respects and reported to the Surgeon General on the appropriate form, modified as necessary. All physical disqualifications or defects found on such examination will be fully reported. In case any of them were noted on the report of the physical examination made when the officer was called into active service, the report of the board will indicate whether there appears to have been any change therein since that examination. If any of the physical disqualifications or defects found on the former examination are not found when the officer is examined upon his relief, the report of the board will affirmatively set forth that fact.

(*b*) The provisions of this paragraph may be waived by the Surgeon General in the case of Reserve Corps officers called into active service for temporary duty.

PERSONAL REPORTS.

18. Officers of the Medicel Reserve Corps in active service will render personal reports similar to those made by officers of the Medical Corps under paragraphs 12 and 13.

19. Every officer of the Medical Reserve Corps not in active service will report his address to the Surgeon General at the end of each calendar year. He will also report promptly every change of address.

Dental Corps.

20. Extracts from the act of March 3, 1911 (36 Stats., 1054):

> Hereafter there shall be attached to the Medical Department a Dental Corps, which shall be composed of dental surgeons and acting dental surgeons, the total number of which shall not exceed the proportion of one to each thousand of actual enlisted strength of the Army; the number of dental surgeons shall not exceed sixty, and the number of acting dental surgeons shall be such as may, from time to time, be authorized by law. All original appointments to the Dental Corps shall be as acting dental surgeons, who shall have the same official status, pay, and allowances as the contract dental surgeons now authorized by law. Acting dental surgeons who have served three years in a manner satisfactory to the Secretary of War shall be eligible for appointment as dental surgeons, and, after passing in a satisfactory manner an examination which may be prescribed by the Secretary of War, may be commissioned with the rank of first lieutenant in the Dental Corps to fill the vacancies existing therein. Officers of the Dental Corps shall have the rank in such corps according to date of their commissions therein and shall rank next below officers of the Medical Reserve Corps. Their right to command shall be limited to the Dental Corps. The pay and allowances of dental surgeons shall be those of first lieutenants, including the right to retirement on account of age or disability, as in the case of other officers: *Provided*, That the time served by dental surgeons as acting dental or contract dental surgeons shall be reckoned in computing the increased service pay of such as are commissioned under this act. The appointees as acting dental surgeons must be citizens of the United States between twenty-one and twenty-seven years of age, graduates of a standard dental college, of good moral character and good professional education, and they shall be required to pass the usual physical examination required for appointment in the Medical Corps, and a professional examination which shall include tests of skill in practical dentistry and of proficiency in the usual subjects of a standard dental college course: *Provided*, That the contract dental surgeons attached to the Medical Department at the time of the passage of this act may be eligible for appointment as first lieutenants, Dental Corps, without limitation as to age: *And provided further*, That the professional examination for such appointment may be waived in the case of contract dental surgeons in the service at the time of the passage of this act whose efficiency reports and entrance examinations are satisfactory. The Secretary of War is authorized to appoint boards of three examiners to conduct the examinations herein prescribed, one of whom shall be a surgeon in the Army and two of whom shall be selected by the Secretary of War from the commissioned dental surgeons.

ACTING DENTAL SURGEONS.

21. Applications for examination for appointment as acting dental surgeons under the foregoing law should be made to the Surgeon General, who will furnish blanks therefor on request. They must in each case be accompanied by certificates from at least two reputable persons as to the applicant's citizenship, character, and habits.

(*a*) When an applicant is selected for examination his application and the certificates therewith will be referred by the Surgeon General to the examining board designated to examine him for its information. The applicant will in due season be notified when and where to present himself to the board.

(*b*) No allowances will be made for the expenses of candidates undergoing examination.

22. Examinations will be authorized and boards to conduct them will be convened from time to time as may be deemed necessary. The medical member of the board will be its president and the junior dental surgeon its recorder. The procedure of the board will correspond to that of other army boards of a similar character.

23. When two or more dental examining boards are convened at the same time one of them will be designated by the Surgeon General as the central examining board, to prepare the questions for the written and oral examinations to be conducted simultaneously by the several boards. In order that there may be no premature disclosure of the questions, the same will be transmitted by the central board confidentially to the Surgeon General for distribution to the other boards in season for the latter's action. When but one board is convened it will prepare the questions for the written and oral examinations of the candidates to appear before it.

24. Each candidate upon presenting himself to the examining board will, prior to his physical examination, be required to sign the certificate required of applicants for appointment in the Med-

ical Corps of the Army (par. 5), and to submit therewith his diploma as a graduate of a standard dental college. If he declines to give the certificate or fails to submit his diploma, the examination will not proceed.

(*a*) *Physical examination.*—His certificate having been given and his diploma having been found satisfactory and returned to him, the medical member of the board will then proceed with the physical examination of the candidate, which will conform in all respects to that required of candidates from civil life for commission in the Medical Corps of the Army. If any physical disqualification for the service is found, the examination will be discontinued and the candidate rejected. The findings of the medical member of the board in respect to the candidate's physical qualifications will be recorded on the form provided for the purpose, and accompany the report of the board upon the conclusion of the examination.

(*b*) *Professional examination.*—If the candidate is found physically qualified, the whole board will then proceed with his professional examination. This will consist of oral and written questions and clinical work, particular stress being laid upon the practical examination. The oral examination will include oral surgery, operative dentistry and prosthetic dentistry. The subjects of the written examination will be anatomy, physiology, and histology; materia medica and therapeutics; dental pathology and bacteriology; chemistry, physics, and metallurgy. The clinical examination will be of such a character as will thoroughly test the candidate's practical knowledge of operative and prosthetic dentistry.

An average of 75 per cent will be required to qualify in the subjects of the written and oral examinations and 85 per cent in the practical examinations.

(*c*) To insure uniformity of standards so far as practicable, the answers to the questions in the written examinations will be rated by the central board, if one has been convened. Whether there is a central board or not, the local boards will rate the oral and practical examinations and report their findings in regard to the physical competency, the moral character, and the general fitness for the service of all the candidates examined by them.

(*d*) The board will make a full report of the examination of each candidate and forward all papers connected therewith direct to the Surgeon General, or to the central board, if one has been convened.

(*e*) Detailed instructions for the guidance of the board will be furnished by the Surgeon General.

25. Candidates who qualify at the examination will be preferred for employment as acting dental surgeons in the order of their standing at the examination, according to the needs of the service during the ensuing year. After the expiration of a year they will no longer be considered eligible until again examined.

(*a*) Contracts to perform the duties of an acting dental surgeon will be entered into on Form 45, by the Surgeon General only, with selected candidates who have qualified as hereinbefore required. They will be annulled only as provided in Army Regulations.

DENTAL SURGEONS.

26. Acting dental surgeons whose work and conduct during a service of three years, as disclosed by the records of the War Department, have given rise to no material and well-grounded criticism will be regarded as eligible for appointment to the grade of dental surgeon, upon the occurring of vacancies therein, subject to a physical and professional examination by a board duly constituted as prescribed by law.

27. The candidate upon presenting himself to the board will, prior to his physical examination, sign the certificate required of applicants for appointment in the Medical Corps of the Army (par. 5). If he declines to give the certificate, the examination will not proceed.

28. *Physical examination.*—The certificate having been given, the medical member of the board will proceed with the candidate's physical examination, which will conform to that prescribed in paragraph 24*a* for candidates for appointment as acting dental surgeons, and will be conducted, discontinued, recorded, and reported in like manner.

29. *Professional examination.*—The candidate having been found physically qualified, the board will then proceed with his professional examination. This will comprise two parts—the written examination and the practical examination. A general average of 75 per cent and not less than 60 per cent in any one subject (except Medical Department administration) will be required

to qualify in the written examination, and a general average of 85 per cent in the practical examination.

(*a*) The written examination will include 10 questions, to be formulated by the board, in each of the following subjects: (1) Medical Department administration—Army Regulations so far as they relate to the Dental Corps of the Army or to the dental surgeon as an officer of the Army; Manual for the Medical Department, so far as it relates to the Dental Corps; Manual for Courts-Martial; (2) oral hygiene; (3) orthodontia; (4) operative dentistry, including recent progress in etiology, pathology, therapeutics, and operative methods; (5) oral surgery, including recent progress in etiology, pathology, therapeutics, and operative procedure.

(*b*) The practical examination will be within the scope of the following schedule. It is not expected that work will be required under all of the clinical subheads indicated. The board will exercise its judgment in selecting the tests according to the time and clinical material available.

(1) Operative: Examination of the oral cavity and diagnosis of pathological conditions found; extraction of roots of broken-down teeth; adjusting porcelain crown, cast base, or grinding; gold filling; compound gold filling; compound amalgam filling; oxyphosphate filling; treatment of exposed pulps and putrescent root canals; prophylactic treatment.

(2) Prosthetic: Taking impressions of mouth, running models, mounting on articulator, and articulating teeth; making gold crown, or gold and porcelain crown, or gold and porcelain bridge.

30. The board will make a full report of the examination of each candidate on the forms provided for that purpose and will forward all papers connected therewith direct to the Surgeon General.

(*a*) Detailed instructions for the guidance of the board will be furnished by the Surgeon General.

31. Candidates who qualify will be recommended to the President for commission.

PERSONAL REPORTS.

32. Dental surgeons and acting dental surgeons will render personal reports similar to those made by officers of the Medical Corps under paragraphs 12 and 13.

Hospital Corps.

CONSTITUTION OF THE CORPS.

33. Extract from the act of March 1, 1887 (24 Stats. 435):

> That the Hospital Corps of the United States Army shall consist of hospital stewards, acting hospital stewards, and privates; and all necessary hospital services in garrison, camp, or field (including ambulance service) shall be performed by the members thereof, who shall be regularly enlisted in the military service; said corps shall be permanently attached to the Medical Department, and shall not be included in the effective strength of the Army nor counted as a part of the enlisted force provided by law.
>
> SEC. 2. That the Secretary of War is empowered to appoint as many hospital stewards as in his judgment the service may require; but not more than one hospital steward shall be stationed at any post or place without special authority of the Secretary of War.
>
> SEC. 3. That * * * hospital stewards * * * shall have rank with ordnance sergeants, and be entitled to all the allowances appertaining to that grade.
>
> SEC. 4. That no person shall be appointed a hospital steward unless he shall have passed a satisfactory examination before a board of one or more medical officers as to his qualifications for the position, and demonstrated his fitness therefor by service of not less than 12 months as acting hospital steward; and no person shall be designated for such examination except by written authority of the Surgeon General.
>
> SEC. 5. That the Secretary of War is empowered to enlist, or cause to be enlisted, as many privates of the Hospital Corps as the service may require, and to limit or fix the number, and make such regulations for their government as may be necessary; and any enlisted man in the Army shall be eligible for transfer to the Hospital Corps as a private. They shall perform duty as wardmasters, cooks, nurses, and attendants in hospitals, and as stretcher bearers, litter bearers, and ambulance attendants in the field, and such other duties as may by proper authority be required of them.
>
> SEC. 6. That * * * privates of the Hospital Corps * * * shall be entitled to the same allowances as a corporal of the arm of service with which on duty.
>
> SEC. 7. That privates of the Hospital Corps may be detailed as acting hospital stewards by the Secretary of War, upon the recommendation of the Surgeon General, whenever the necessities of the service require it; * * *. Acting hospital stewards, when educated in the duties of the position, may be eligible for examination for appointment as hospital stewards as above provided.

(*a*) Section 18 of the act approved February 2, 1901 (31 Stats. 753), fixed the number of hospital stewards at 300 and provided:

That men who have served as hospital stewards of volunteer regiments or acted in that capacity during and since the Spanish-American War for more than six months may be appointed hospital stewards in the Regular Army: *And provided further*, That all men so appointed shall be of good moral character and shall have passed a satisfactory mental and physical examination.

(*b*) The act of March 2, 1903 (32 Stats. 930), defines the present status of the corps as follows:

That hereafter the Hospital Corps of the United States Army shall consist of sergeants first class, sergeants, corporals, privates first class, and privates; the rank * * * of sergeants first class, sergeants, and privates first class shall be as now provided by law for hospital stewards, acting hospital stewards, and privates of the Hospital Corps; * * *. That the Secretary of War is authorized to organize companies of instruction, ambulance companies, field hospitals, and other detachments of the Hospital Corps as the necessities of the service may require.

MASTER HOSPITAL SERGEANTS, HOSPITAL SERGEANTS, SERGEANTS FIRST CLASS, AND SERGEANTS.

34. An application for appointment as master hospital sergeant, hospital sergeant, sergeant first class, or sergeant must be accompanied by an affidavit stating whether or not the applicant is married.

Applications from commands under the immediate supervision of the War Department will be forwarded direct to the Surgeon General. Applications from other posts or commands will be forwarded: (1) If for appointment as master hospital sergeant, hospital sergeant, or sergeant first class, through the department surgeon to the Surgeon General; and (2) if for appointment as sergeant, to the department surgeon.

(*a*) Appointments of married men to the grades of master hospital sergeant, hospital sergeant, sergeant first class, and sergeant will be made only with the understanding that the applicant will be entitled to no special consideration on account of his marital condition. (*C. M. M. D., No. 1.*)

35. Examinations for appointment to these grades are conducted by boards of medical officers conformably to the provisions of Army Regulations. The examinations will be both oral and practical, and written. They will embrace the same subjects for all the grades; the higher the grade the more difficult the examination.

(*a*) Examinations for appointment to the grades of master hospital sergeant, hospital sergeant, and sergeant first class at all posts, and for appointment to the grade of sergeant in commands directly under the War Department, will be held at such times as may be designated by the Surgeon General. The questions for the written examinations will be prepared in his office.

(*b*) Examinations for appointment to the grade of sergeant, except in commands directly under the War Department, will be held under the direction of department surgeons whenever they deem the same necessary (generally once or twice a year) without previous reference to the Surgeon General. The questions for the written examinations will be prepared by the department surgeons.

(*c*) The examining board will investigate and report upon the candidate's qualifications under the following heads: (1) Physical condition; (2) character and habits, especially as to the use of stimulants and narcotics; (3) discipline and control of men; (4) knowledge of regulations; (5) nursing; (6) dispensary work; (7) clerical work; (8) principles of cooking and mess management; (9) Medical Department drill; (10) minor surgery and first aid, including extraction of teeth. The board will require the candidate to prepare a full set of papers pertaining to the Medical Department, and to drill a detachment of the Medical Department sufficiently to demonstrate his thorough knowledge of the drill regulations.

(*d*) The written examination will embrace the following subjects: (1) Arithmetic; (2) materia medica; (3) pharmacy; (4) care of sick and ward management; (5) minor surgery and first aid; (6) elementary hygiene. Ten questions will be asked in each subject. Proficiency in penmanship and orthography will be estimated from the papers submitted.

(*e*) The report of the examining board in the case of a candidate for appointment as master hospital sergeant, hospital sergeant, or sergeant first class, will be forwarded with the examination papers direct to the Surgeon General, under whose direction the papers will be marked. In the case of a candidate for appointment as master hospital sergeant or hospital sergeant the board in forwarding the papers will report its opinion, based on the candidate's past record and experience as to his ability, adaptability, and general fitness for the position. The board will mark the papers of a candidate for appointment as sergeant, and will then send them to the department surgeon, or in the case of a command directly under the War Department, direct to the Surgeon General, with its report as to the candidate's qualifications. If the report is made to a department surgeon, he will, after taking appropriate action in the premises, forward all the papers, with a note of his action, to the Surgeon General inclosing a copy of the questions asked in the written examination.

(*f*) The scope and character of the examination for appointment as sergeant first class, limited warrant, or sergeant, limited warrant, will be prescribed by the Surgeon General from time to time as occasion requires. In forwarding its report the board will recommend whether the candidate should be appointed.

(*g*) Eligibility for appointment to these grades in the case of candidates who qualify will continue for one year from the dates of their examination, respectively. (*C. M. M. D., No. 1.*)

36. Master hospital sergeants, hospital sergeants, sergeants first class, and sergeants may be reenlisted in their respective grades, on the authority of the Surgeon General, subject to the conditions prescribed in Army Regulations.

(*a*) A sergeant first class who desires to reenlist will report that fact, through medical channels, to the Surgeon General, at least 60 days before the termination of his active service with the organization under his current enlistment. A reexamination will be held before first reenlistment if the applicant has served for more than one year in the grade. In case an applicant has served for less than one year in this grade, the examination may be waived by the Surgeon General, provided the detachment commander and the department surgeon having supervision over it concur in the statement that he has performed his duties efficiently. In case examination has been waived before first reenlistment, it will always be held before the second reenlistment. No examination on subsequent reenlistments will ordinarily be held unless, in the judgment of the Surgeon General, the interests of the service require it.

(*b*) Examinations for reenlistment in the grades of master hospital sergeant, hospital sergeant, and sergeant are not required. (*C. M. M. D., No. 1.*)

ACTING COOKS.

37. The act of Congress approved May 11, 1908 (35 Stats. 109), providing for acting cooks for the Hospital Corps, is regarded as having established a new grade in that corps.

(*a*) Acting cooks are not enlisted as such. Under authority granted by the Surgeon General, in accordance with the provisions of paragraph 38, an officer commanding any hospital or other sanitary formation may appoint acting cooks by promotion from among the privates first class or privates on duty therein.

(*b*) An acting cook may be reduced for inefficiency or misconduct at the discretion of such officer, but acting cooks who were promoted from the grade of private first class will not be reduced to the grade of private except by order of a department surgeon, the Surgeon General, or by sentence of a court-martial.

38. Acting cooks are authorized in the proportion of not to exceed 6 per cent of the total enlisted strength of the Hospital Corps. They will be authorized and assigned by the Surgeon General to hospitals and other sanitary formations where needed, as are sergeants, Hospital Corps.

(*a*) In general it is considered that one cook is sufficient for a mess of 50 persons or major fraction thereof.

CORPORALS.

39. The appointment of corporals and lance corporals of the Hospital Corps is governed by Army Regulations.

ENLISTMENTS IN AND TRANSFERS TO THE CORPS.

40. Medical officers will not make enlistments or reenlistments for the Hospital Corps without obtaining special authority from the Surgeon General or the department surgeon. Department surgeons are authorized to enlist for the Hospital Corps up to the regular allowance of their respective departments without reference to the Surgeon General. They may also authorize reenlistments of privates, privates first class, lance corporals, corporals, and sergeants, serving within their respective departments. (See Army Regulations.)

(*a*) Contract surgeons can not make enlistments, as the oath must be administered by a commissioned officer.

(*b*) The enlistment papers of all men enlisting or reenlisting in the Hospital Corps will be forwarded direct to The Adjutant General of the Army.

41. When a man is enlisted for, reenlisted in, or transferred to, the Medical Department, the medical officer who first receives him will prepare and forward a record card of the soldier directly

to the Surgeon General, except in the case of a man stationed in the Philippine, Hawaiian, or Panama Canal Department, when the card will be sent through the department surgeon. (*C. M. M. D., No. 3.*)

ENLISTED ASSISTANT TO THE DENTIST.

42. The enlisted assistant to the dentist will be attached to the detachment of the Hospital Corps. He will be regarded as being under special instruction while on duty with the dentist and will not be required to attend other instruction.

DUTIES OF NONCOMMISSIONED OFFICERS.

43. The duties of noncommissioned officers of the Hospital Corps are to maintain discipline in hospitals and watch over their general police; to supervise the duties and assist in the instruction of the members of the Hospital Corps in hospital and in the field; to look after and distribute hospital stores and supplies; to care for hospital property; to compound medicines; to prepare reports and returns; and to perform such other duties as may, by proper authority, be required of them.

ASSIGNMENT TO DUTY.

44. Sergeants first class, Hospital Corps, are assigned to duty by the War Department on the recommendation of the Surgeon General. Other members of the Hospital Corps are assigned to duty by the department commander on recommendation of the department surgeon, except at independent posts, where all assignments are made by the War Department. In the Philippine Department, in the Hawaiian Department, and in the Canal Zone all members of the Hospital Corps are assigned by the department commander.

CHANGES OF STATION OR STATUS.

45. During time of peace all changes in the personnel of the Hospital Corps by enlistment, discharge, death, desertion, etc., and all changes in the stations of its members by departure for, or arrival from, another post or command, will be reported at once, and such other changes from the status of duty at post or with the command as may affect their availability for transfer or detached service, as sickness, confinement, furlough, or absence without leave, lasting as long as 10 days, will be reported on the tenth day and again upon return to a duty status, by the officer commanding the detachment or Medical Department organization.

(*a*) In cases of discharge the report will show, first, the soldier's character given on discharge; second, objections to his reenlistment, if there are any, otherwise the fact that there are none; third, his physical condition, good or poor; fourth, whether he is single or married; fifth, his mail address; and sixth, such other information as may be pertinent.

(*b*) In all cases the particulars of the changes reported will be indicated in full.

(*c*) From independent posts and stations these reports will be forwarded direct to the Surgeon General. In other cases they will be forwarded in duplicate to the department surgeon who will send the original without delay to the Surgeon General and retain the carbon copy for his own records.

46. Whenever in time of peace a soldier of the Medical Department is transferred from one station to another, the surgeon of his old station will attach an efficiency report of the soldier on Form 80 to the soldier's service record. (*C. M. M. D., No. 3.*)

CLOTHING AND EQUIPMENTS.

47. The clothing allowances of enlisted men, including soldiers of the Hospital Corps, are prescribed in War Department orders published from time to time. (See Appendix: *Clothing and Equipment.*)

(*a*) White duck clothing as issued by the Quartermaster Corps should be worn by Hospital Corps men on duty in the wards, dispensaries, post-mortem rooms, operating rooms, messrooms, and kitchens of hospitals; also by Hospital Corps men on duty as assistants to dental surgeons. White clothing soiled while on such duty may be included in the hospital laundry (par. 267).

(*b*) Medical officers when transferring members of the Hospital Corps from one station or command to another will transmit with the service record of each man a statement showing the sizes of his clothing as kept on file at his old station. (See Appendix: *Clothing and Equipment.*) (*C. M. M. D., No. 3.*)

48. When a soldier of the Hospital Corps is transferred from one post or command to another (except as noted in (*a*) and (*b*) of this paragraph) no articles of public property, other than the necessary clothing, will be transferred with him unless ordered by the authority directing the soldier's transfer.

(*a*) In the case of soldiers of the Hospital Corps ordered on field service, the equipment to be taken is usually prescribed in the order directing the movement. When not so prescribed the equipment transferred with the soldier will be that specified in paragraph 865*a*.

(*b*) The articles of individual equipment to be carried by members of the Hospital Corps en route to or from the Philippine Islands are prescribed in general orders. (See Appendix: *Hospital Corps.*)

49. Articles of personal equipment, belonging to the Medical Department, which a detached soldier carries with him, will be listed upon duplicate invoice blanks, Form 28, each invoice being signed by the issuing officer, and by the soldier acknowledging receipt of the property. The invoices will, when practicable, indicate the soldier's destination. One of them will be forwarded with the soldier's service record, upon which a remark will be made that it is so accompanied, as "Invoice herewith of medical property in the soldier's possession"; the other will be forwarded at once by the issuing officer direct to the Surgeon General. The issuing officer will drop from his return the articles thus transferred, which will be taken up by the officer to whom the soldier reports. The latter officer will execute duplicate receipts therefor on Form 28 (naming therein the soldier with whom the articles were received), one of which he will forward at once direct to the Surgeon General and the other to the issuing officer, filing with his retained papers the invoice which accompanied the service record. (For general rule governing transfers of medical property see par. 496 et seq. For medical property transferred with sick see par. 228.)

(*a*) Ordnance property transferred in the possession of enlisted men will be accounted for as prescribed in Army Regulations. (*C. M. M. D., No. 3.*)

RETURN OF THE HOSPITAL CORPS.

50. This return will be rendered bimonthly for sanitary troops in garrison, upon Form 47 (for the periods ending January 31, March 31, May 31, July 31, September 30, and November 30, respectively), and monthly for sanitary troops in the field, upon Form 47*a*, by the immediate commanding officer of every sanitary formation, and will be forwarded through medical channels to the Surgeon General within five days after the close of its period. A final return will be made upon the breaking up of each sanitary formation.

Contract Surgeons.

51. Extract from the act of February 2, 1901, section 18 (31 Stats. 752):

> That in emergencies the Surgeon General of the Army, with the approval of the Secretary of War, may appoint as many contract surgeons as may be necessary, at a compensation not to exceed $150 per month.

52. Contracts with private physicians are entered into only by the Surgeon General or by his authority. They are either general or special.

(*a*) General contracts will be made on Form 44; special on Form 44*a*. If made by the Surgeon General himself they will be executed in triplicate, one number for the physician, the other two for the Surgeon General and the Auditor for the War Department. When the contract is made by another officer a fourth number should be executed, to be retained by him.

(*b*) Contracts will be annulled only in conformity with their stipulations.

53. A general contract obligates the contract surgeon to take station and change station as ordered. He is furnished quarters at the military post where he is stationed, and is expected to give his entire time to the public service. He receives pay as stipulated in the contract, and the travel, fuel, and light allowances of a first lieutenant. Under existing law it is not the policy of the department to make or authorize general contracts except in extraordinary cases, and upon a full exhibition of the necessity thereof. If the exigency requiring the employment of a contract surgeon is likely to be temporary, the contract will be made for a term of three months only or less. If its longer continuance is probable, the term will usually be one year. In either event it is subject to annulment when the services of the physician are no longer required.

(*a*) Short-term general contracts may be made with any graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, who has qualified to practice medicine in the State or Territory in which he resides. Appropriate evidence that he has so qualified should be required before the contract with him is executed.

(*b*) Long-term general contracts will be made only with such graduate and qualified practitioners, who are citizens of the United States, after they shall have passed an appropriate examination as to their physical and professional qualifications for the military service. Applications for employment under such contracts will be made to the Surgeon General, who will furnish blanks for the purpose upon request. They will be considered only as the exigency requiring the appointment of a contract surgeon shall arise. They must in each case be accompanied by testimonials from at least two reputable persons as to the applicant's citizenship, character, and habits, and by a certificate from the proper local official that the applicant has qualified to practice medicine in the State or Territory where he resides. Should the application be favorably considered, the applicant will at the proper time be invited to appear before the examining board at the place most convenient for him. No allowances will be made for his expenses while undergoing examination. The examinations will be conducted under instructions from the Surgeon General, by boards of one or more officers of the Medical Corps convened therefor at military posts or stations. Upon presenting himself to the board the applicant should submit his diploma, and evidence of his citizenship (if of foreign birth), which will be returned to him upon the conclusion of the examination. Having inspected his diploma and the evidence of his citizenship, the board, if the same are found satisfactory, will then make a thorough physical examination of the applicant, which must conform in all respects to that required of candidates for commission in the Medical Corps. If any physical disqualification for the service is found the examination will be discontinued. The board will report the physical examination on the form provided therefor. Should no physical disqualification be found, the board will next proceed with a professional examination of the applicant similar to that prescribed in the case of applicants for appointment in the Medical Reserve Corps (par. 16*c*). It will make a full report of the examination of each applicant and forward all the papers connected therewith direct to the Surgeon General. If the examination is satisfactory a contract will in due season be sent the applicant for signature.

54. Special contracts are for local service only, at stations therein designated, as, for example, at arsenals, where the amount of service called for is not usually sufficient to warrant the assignment thereto of a medical officer. No travel under such contracts is required. The physician contracted with is neither expected to take station at the post nor to give up his private practice, except in so far as he has to do so in order to carry out his public duties. He is not furnished quarters or other allowances, and his pay proper constitutes his entire compensation.

(*a*) Special contracts may be made with any graduate of a reputable medical school, legally authorized to confer the degree of doctor of medicine, who is a citizen of the United States and has qualified to practice medicine in the State or Territory in which he resides. Appropriate evidence that he is a citizen of the United States, and that he has qualified to practice as above, should be required before the contract with him is executed.

PERSONAL REPORTS.

55. Contract surgeons will render personal reports similar to those made by officers of the Medical Corps under paragraphs 12 and 13.

Nurse Corps.

56. Extract from the act of February 2, 1901 (31 Stats. 753):

SEC. 19. That the Nurse Corps (female) shall consist of one superintendent, to be appointed by the Secretary of War, who shall be a graduate of a hospital training school having a course of instruction of not less than two years, whose term of office may be terminated at his discretion, whose compensation shall be one thousand eight hundred dollars per annum, and of as many chief nurses, nurses, and reserve nurses as may be needed. Reserve nurses may be assigned to active duty when the emergency of the service demands, but shall receive no compensation except when on such duty: *Provided*, That all nurses in the Nurse Corps shall be appointed or removed by the Surgeon General, with the approval of the Secretary of War; that they shall be graduates of hospital training schools, and shall have passed a satisfactory professional, moral, mental, and physical examination: *And provided*, That the superintendent and nurses shall receive transportation and necessary expenses when traveling under orders; that the pay and allowances of nurses, and of reserve nurses when on active service, shall be forty dollars per month when on duty in the United States and fifty dollars per month when on duty without the limits of the United States. They shall be entitled to quarters, subsistence, and medical attendance during illness, and they may be granted leaves of absence for thirty days, with pay, for each calendar year; and, when serving as chief nurses, their pay may be increased by authority of the Secretary of War, such increase not to exceed twenty-five dollars per month. Payments to the Nurse Corps shall be made by the Pay Department.

(*a*) The foregoing was modified by the terms of the act of March 23, 1910 (36 Stats. 249), as follows:

The superintendent and members of the Female Nurse Corps shall hereafter be paid at the following rates: Superintendent Nurse Corps, one thousand eight hundred dollars per annum; female nurses, fifty dollars per month for the first period of three years' service; fifty-five dollars per month for the second period of three years' service; sixty dollars per month for the third period of three years' service; and sixty-five dollars per month after nine years' service in said Nurse Corps; and all female nurses shall hereafter be entitled, in addition to the rates of pay as herein provided, to ten dollars per month when serving beyond the limits of the States comprising the Union and the Territories of the United States contiguous thereto (excepting Porto Rico and Hawaii), and to cumulative leave of absence with pay at the rate of thirty days for each calendar year of service in said corps; and when serving as chief nurses their pay may be increased by authority of the Secretary of War, such increase not to exceed thirty dollars per month; and the superintendent shall be entitled to the same allowances, when on duty, as the members of the Nurse Corps.

(*b*) Extract from the act of March 4, 1912 (37 Stats. 72):

That the superintendent and members of the Female Nurse Corps when serving in Alaska or at places without the limits of the United States may be allowed the same privileges in regard to cumulative leaves of absence and method of computation of same as are now allowed by law to Army offices so serving.

(*c*) Extract from the act of March 4, 1915 (38 Stats. 1068):

That the superintendent shall receive such allowances of quarters, subsistence, and medical care during illness as may be prescribed in regulations by the Secretary of War.

(*d*) Extract from the act of March 4, 1915 (38 Stats. 1069):

Hereafter at places where there are no public quarters available, commutation for the authorized allowance therefor shall be paid to * * * members of the Nurse Corps * * * at the rate of $12 per room per month.

THE SUPERINTENDENT.

57. The superintendent, under the direction of the Surgeon General, has general supervision of the corps. She will, by authorized inspections from time to time and by reference to the prescribed reports and returns, keep herself constantly informed of the numbers, distribution, and competency of the individual members of the corps, and of its state and condition as a whole. She will communicate with nurses' training schools, nurses' associations, and similar professional bodies with a view to ascertaining where acceptable nurses for Army service may be available; will conduct the necessary correspondence concerning the qualifications of applicants for appointment in the corps; will make the professional examination of those who shall meet the required preliminary conditions; and when vacancies occur will recommend the appointment to the same of eligible applicants. She will prepare the questions for the examination of nurses for promotion to the grade of chief nurse, will rate the answers received thereto, and will recommend the promotion of those found qualified as their services shall be needed. She will make timely recommendations regarding the assignment, transfer, discipline, and discharge of nurses, and the reduction and discharge of chief nurses. She will endeavor by all suitable means within her power to maintain the usefulness of the corps as a part of the Medical Department of the Army, will propose to the Surgeon General as occasion requires appropriate measures for the promotion of its morale and efficiency, and will perform such other supervisory duties as the Surgeon General shall prescribe.

CHIEF NURSES, THEIR SELECTION, REDUCTION, AND DISCHARGE.

58. Chief nurses are not originally appointed as such, but are appointed by promotion from the grade of nurse by the Surgeon General, with the approval of the Secretary of War.

(*a*) When two or more chief nurses are serving at the same station, one will be assigned to duty as principal chief nurse, and the others will serve as her assistants. (*C. M. M. D. No. 12, Oct. 9, 1919.*)

59. Permanent appointments as chief nurse are made only by the Surgeon General, with the approval of the Secretary of War, and upon the recommendation of the superintendent. A nurse will not be permanently appointed as chief nurse unless she shall have passed a satisfactory examination.

(*a*) Nurses who exhibit marked executive ability, good judgment, and tact will be recommended to the Surgeon General by the commanding officer of the hospital or other sanitary formation with which they are on duty, for examination for promotion to the grade of chief nurse.

(*b*) Any nurse, regardless of the length of her service, may request examination for promotion to the grade of chief nurse. Her request will be forwarded to the Surgeon General through her immediate commanding officer with his recommendations in the premises, and the recommendations of his chief nurse if he has one.

(*c*) Nurses approved and recommended for promotion under the above provisions, and such others as shall be selected by the superintendent, shall be eligible for examination for permanent appointment as chief nurses.

(*d*) At such times as he may deem necessary the Surgeon General will designate a medical officer to conduct the examination of approved candidates. He will in due season transmit lists of questions prepared by the superintendent to the examining officer, who will safeguard them against premature disclosure, will make sure that the candidates receive no unauthorized assistance during the examination, and will upon its conclusion transmit all the examination papers, including both questions and answers, to the Surgeon General for his action. (*C. M. M. D. No. 12, Oct. 9, 1919.*)

60. A nurse permanently appointed as chief nurse will not be reduced to nurse except by direction of the Surgeon General, with the approval of the Secretary of War; but in case of serious misconduct she may be summarily relieved and assigned to duty as nurse pending such further measures of discipline as may be deemed necessary. If for any other reason the services of a permanent chief nurse are no longer required as such, the commanding officer of the hospital or other sanitary formation will report the case with his recommendations to the Surgeon General. (*C. M. M. D.No. 12, Oct. 9, 1919.*)

61. During her absence or inability to perform duty, the commanding officer of a hospital or other sanitary formation to which a chief nurse permanently appointed as such is assigned may assign a nurse as temporary chief nurse to perform duty in her stead. A nurse so assigned shall be known as "temporary chief nurse" and shall hold such assignment only during the absence or inability to perform duty of the permanent chief nurse in whose stead she is acting.

(*a*) Temporary chief nurses may be relieved from duty as such and assigned to duty as nurses at the discretion of their immediate commanding officers.

(*b*) A temporary chief nurse will receive no additional pay or allowances while serving as such. (*C. M. M. D. No. 12, Oct. 9, 1919.*)

APPOINTMENT OF NURSES.

62. Applications for appointment in the Nurse Corps should be made to the superintendent, who will furnish blanks therefor.

(*a*) An applicant for first appointment must be between 25 and 35 years of age and unmarried. If not a citizen of the United States, she must before appointment make a declaration of her intention to become such, and, if she wishes to continue in the Nurse Corps, must at the proper time take out final naturalization papers.

(*b*) Applications from States and Territories where registration is required by law will be considered in the cases only of graduates of training schools which are acceptable to the State or Territorial boards of registration. In making appointments from among eligible applicants residing in such States and Territories preference will be given to those who are registered.

(*c*) Nurses who have had previous service in the Army Nurse Corps and are otherwise acceptable will be given preference for appointment over new nurses who qualify for the corps.

63. *Physical qualifications.*—The applicant's physical fitness for service will be ascertained by a careful physical examination. The examination will be made when practicable by a medical officer of the Army at his proper station. When, however, this would require the applicant to make an unreasonably long journey, the Surgeon General may authorize her examination by a private physician of good repute in the vicinity of her residence. The applicant must be not less than 60 inches nor more than 70 inches in height, and must weigh not less than 100 pounds nor more than 195 pounds. Marked disproportion between height and weight will be a cause of rejection. The medical examiner will send his report direct to the superintendent and not give it to the applicant. Its contents will be regarded as confidential. (See also par. 74*a*.)

64. *Moral, professional, and mental qualifications.*—An applicant will not be eligible for appointment in the Nurse Corps unless she shall have graduated from a training school for nurses giving a

thorough professional education, both theoretical and practical, and requiring a residence of at least two years in an acceptable general hospital of 100 beds or more; except that graduates of training schools connected with hospitals not meeting the above requirements may, upon submitting proof of at least six months' subsequent experience in a large general hospital, be put on the eligible list if found otherwise qualified. To ascertain the applicant's qualifications the superintendent of the Nurse Corps will request a certificate from the superintendent of the school from which the applicant graduated, showing: (1) The date of the applicant's graduation; and (2) her moral character and professional qualifications during her period of training, at the date of her graduation, and (so far as known) at the time of the application. If the applicant was trained under a former superintendent, the latter may also be asked for a certificate. These certificates will be regarded as confidential. Applicants must submit such other evidence of fitness as may be required.

(*a*) The professional and mental examination of applicants will be in writing and will be conducted by the superintendent. It will ordinarily take the form of requiring from the candidates short essays or papers on practical professional subjects selected by the superintendent. The subjects selected will be furnished to each applicant with her application blanks, and she will submit her essay with her formal application. The essay must be in the handwriting of the applicant. Typewritten papers will not be accepted.

65. Applicants who fulfill the prescribed conditions as to their physical, moral, professional, and mental qualifications will be placed on the eligible list for appointment as their services may be required.

66. No applicant will be appointed unless she shall agree to serve for three years.

67. A nurse who desires to continue in the corps after three years' service therein will apply for continuation of service by letter forwarded at least four months before the end of the three years to the Surgeon General, through the commanding officer of the hospital or other sanitary formation to which she is attached, who will forward therewith his recommendations in the premises and the recommendations of the chief nurse. If the recommendations of her commanding officer are unfavorable the nurse will be promptly notified of that fact. To obtain favorable action on such application the nurse must have had a satisfactory record for efficiency and conduct. The superintendent of the Nurse Corps will advise the Surgeon General whether the applicant's record is such as to make her continuance in the corps desirable. Due notice will be given to the applicant and officers concerned of the action taken upon the application.

(*a*) A similar procedure for continuation of service will be followed toward the end of every period of three years of continuance in the corps.

DISCHARGE.

68. A nurse who fails to apply for continuation of service as provided in paragraph 67, or whose continuance in the service is not authorized by the Surgeon General, will be discharged on or about the expiration of the three-year period in which she is serving, making due allowance for accrued leave of absence; the period of three years, six years, nine years, etc., as the case may be, to be calculated from the date of her letter of appointment: *Provided*, That a nurse under orders to proceed to her home to await discharge will not be discharged until she shall have arrived home, or shall have had sufficient time to arrive home by following the usual route of travel with ordinary diligence. Nurses may also by order of the Surgeon General be discharged at any time, regardless of the three-year periods, making due allowances for accrued leaves of absence: (1) Because of their reduction from the grade of chief nurse (see par. 60); (2) because of a reduction of the Military Establishment or a decrease in the number of sick requiring nursing which makes their further employment unnecessary; (3) because of their own illness disabling them from the performance of their duties (see par. 87); (4) because of their unsuitability for the military service; (5) because of their own misconduct; and (6) in proper cases on their own application.

(*a*) Honorable discharges will be given in all cases except to nurses discharged for misconduct or to those whose resignations are accepted conformably to the provisions of paragraph 70*a*.

(*b*) Discharges will be executed by the commanding officer of the hospital or other sanitary formation to which the nurses are attached.

69. Recommendations for the discharge of a nurse on account of misconduct will be submitted to the Surgeon General, with a report of the facts, after a careful investigation, in which she shall have had a fair opportunity to be heard in her own defense. The term ''misconduct'' includes the case of a nurse who of her own motion quits or abandons the service in advance of discharge.

70. A nurse who, having served continuously more than three years, desires her discharge, may obtain the same upon application therefor by letter to the Surgeon General. If she is on duty, her application will be forwarded through her immediate commanding officer; if she is on leave in the Philippine Islands, it will be forwarded through the department surgeon; in other cases it will be forwarded direct.

(*a*) A nurse who, having served continuously less than three years, desires her discharge, may apply therefor by letter similarly forwarded, stating her reasons in full. If these reasons are sufficient in the judgment of the Surgeon General he may grant her an honorable discharge; if, in his judgment, they are not sufficient, he may consider her application a resignation and accept the same.

71. Upon honorable discharge from the service the following indorsement will be placed upon the nurse's letter of appointment:

———. ———, 19—.

With the approval of the Secretary of War, and by order of the Surgeon General, dated ———, the nurse within named is honorably discharged from the Army Nurse Corps, to take effect ———, 19—.

——— ———,
United States Army.

(*a*) If a nurse is to be discharged by acceptance of her resignation, the following indorsement will be placed on her letter of appointment:

——— ———, 19—.

With the approval of the Secretary of War the resignation of ——— ——— is accepted to take effect ———, 19—.

——— ———,
United States Army.

(*b*) When the nurse is discharged for misconduct the word "honorably" in the indorsement of discharge will be omitted, and the words "for misconduct" will be inserted after the words "Corps."

(*c*) When the nurse's letter of appointment is not available for the indorsement thereon of her discharge, a letter of discharge of equivalent purport will be sent to her.

72. Except as provided in the following paragraph, orders to proceed to her home, there to await discharge, will be given to every nurse desiring the same who is about to be discharged. In arranging travel orders in such cases it must be borne in mind that the Government will not pay the traveling expenses of a nurse in the status of leave of absence.

(*a*) When a nurse arrives home for discharge she will at once report by letter to the Surgeon General inclosing her letter of appointment and a copy of her official travel order.

73. Orders to proceed to her home will not be given (1) to a nurse who is discharged on her own request before the expiration of three years of continuous service, except to a nurse who is to be discharged upon her own election because of reduction from the grade of chief nurse; (2) or, before the completion of two years of continuous service in the Philippine Isalnds, to a nurse on service in those islands who is discharged on her own request, or who, failing to apply for continuation of service at the end of the three-year period in which she is serving, is discharged on or about the expiration of such period conformably to paragraph 68; (3) or to a nurse who is discharged for misconduct.

(*a*) Any nurse, however, who is discharged for misconduct while serving beyond the continental limits of the United States, or in the Canal Zone, or in Alaska, will be furnished transportation to a home port and allowed the necessary expenses incident to travel thereto, provided she applies for the same within 30 days of the date of her discharge.

ASSIGNMENTS AND TRANSFERS.

74. Army nurses will be assigned to duty at hospitals or other sanitary formations in the United States or abroad, and on transports, according to the needs of the service.

(*a*) At the station where a nurse first reports for duty after her appointment, the surgeon will require her to undergo a careful physical examination. A report of the same will be forwarded, on Form 69, direct to the Surgeon General. (See also par. 63.)

(*b*) Usually the nurse's first assignment will be to a station in the United States, to afford her an opportunity to become acquainted with military usages.

(*c*) The usual tour of duty without the limits of the United States proper will be two years.

75. When nurses are required for service with any organization of the Medical Department, the commanding officer thereof will, by letter stating the circumstances and necessities of the case, make application through the department surgeon to the Surgeon General, or, in the case of independent commands, direct to the Surgeon General, for as many as may be needed.

(*a*) Should there be a surplus of nurses with any hospital or other sanitary formation, the commanding officer thereof will in like manner immediately report the fact to the Surgeon General. In the case of surplus nurses serving beyond the limits of the United States the surgeon of the forces with which they are on duty will recommend to the commanding general that they be returned to the United States. Nurses so returned will on arrival at the home port report at once to the department surgeon of the territorial department within the limits of which the port is situated, who will place them on temporary duty and request instructions as to his further action in the premises from the Surgeon General.

76. A nurse will not leave her station except under orders or when granted a leave of absence.

(*a*) When a nurse leaves her station under orders or on leave of absence the commanding officer of the organization of the Medical Department with which she has been on duty will indorse on her letter of appointment the date of her departure and the date and source of the authority therefor. The letter of appointment will be given to the nurse, together with a copy of her travel order. The date of arrival at her new station or of return to duty will be similarly indorsed on her letter of appointment.

(*b*) When a nurse leaves her station under orders to proceed to another station the surgeon of the station from which she departs will prepare in her case a record of assignment and pay, Form 66, and mail the same without delay to the officer to whom she is ordered to report. Should she be again transferred without having been absent or having received pay at her new station, her commanding officer may, instead of preparing a new record, forward the one received by him to her next commanding officer by indorsement expressly stating such facts.

77. Nurses will not be transferred from one department to another except by authority of the Surgeon General, but a department surgeon may transfer nurses, should the exigencies of the service require it, from one hospital to another within his department.

PAY.

(See par. 56*a*.)

78. The pay of chief nurses is $30 a month in addition to their pay as nurses. (*C. M. M. D., No. 12, October 9, 1919.*)

79. Subject to the modifications indicated hereinafter, nurses, including chief nurses, will be paid monthly on pay rolls prepared and certified by the commanding officer of the hospital or other sanitary formation to which they are attached for duty. Blank forms for the purpose will be furnished by the Quartermaster Corps. The instructions thereon must be carefully observed.

(*a*) Discharged nurses will be paid on pay rolls certified by the commanding officer of the hospital or other sanitary formation to which they were attached at the time of discharge.

(*b*) The pay accounts of nurses ordered home for discharge will be prepared in the office of the Surgeon General.

(*c*) All payments to nurses must be noted on their letters of appointment.

QUARTERS.

80. When practicable, the allowance of quarters provided by Army Regulations for nurses on duty in hospitals will include 1 dining room, 1 kitchen, 1 sitting room, and the necessary toilet rooms for the common use of all the nurses, and a separate bedroom for each nurse and chief nurse; also at hospitals where more than 5 nurses are stationed, an office and a separate sitting room for the chief nurse.

(*a*) The Medical Department will supply the necessary furniture and care for the quarters of nurses on duty in hospitals. Sheets, towels, pillowcases, table linen, and other washable articles so supplied will be laundered as a part of the hospital laundry.

SUBSISTENCE.

81. The rations of nurses and chief nurses on duty in hospitals are commuted at rates authorized in Army Regulations, and paid into the hospital fund conformably to the provisions thereof and of paragraph 248 of this manual. The commanding officer of the hospital will provide a proper

mess for the members of the Nurse Corps, including service, allowing them their equitable share in all the revenues of the fund.

(*a*) Nurses and chief nurses on Government transports are furnished meals free of charge in the saloon mess.

(*b*) When on duty in a city or town or at a station where subsistence is not furnished by the Government, and when on leave of absence with pay, they receive commutation of rations at rates fixed in Army Regulations. (*C. M. M. D., No. 6.*)

TRANSPORTATION AND TRAVELING ALLOWANCES.

82. Nurses traveling under orders are entitled at public expense to their own transportation and to traveling allowances and transportation of baggage as provided in Army Regulations. They will not be allowed to delay en route except when such delay is authorized in the travel order. All such authorized delays will be regarded as leave.

83. The Quartermaster Corps will ordinarily furnish the required transportation in kind, or will issue transportation requests upon carriers for the same.

(*a*) When transportation in kind is not furnished, and transportation requests can not be procured, the nurse may pay her own travel fare (which must not exceed the cost of a first-class limited ticket between her starting point and her destination), and ask for reimbursement in her expense account in accordance with the following section:

(*b*) When a nurse traveling under orders incurs traveling expenses for which she is entitled to reimbursement she will prepare her account of the same on Form 350 or 350*a*, W. D., inclosing therewith an itemized statement of the expenses, in duplicate (showing the date when and the place where each item thereof was incurred), and receipts for the several items charged, or her certificate that it was impracticable to obtain them. She will sign and make oath to the correctness of the voucher before an officer having authority to administer oaths. If the expenses were incurred en route home for discharge, she will after her arrival home forward the completed voucher to the Surgeon General for his action; if they were otherwise incurred, she will submit the voucher to the commanding officer of the hospital or other sanitary formation to whom she reports at the end of her journey, who will certify it if he finds it correct and transmit it to the nearest disbursing quartermaster for settlement. With these papers the nurse will send a copy of her official travel order.

(*c*) When transportation requests issued by the Quartermaster Corps are not used or when they are exchanged for railroad tickets and the tickets, or any parts of the same, are not used, the unused transportation requests, tickets, or parts of tickets, must in compliance with Army Regulations be returned to the officer who issued the requests.

84. A nurse on service beyond the continental limits of the United States, or in the Canal Zone, or in Alaska, who is ordered to a home station, or to her home for discharge, will usually be provided at the station where she is serving with transportation to a home port. On arrival at such port she will apply to the depot quartermaster at the port or in its immediate vicinity, if there is one, for the further transportation required, exhibiting her travel orders. If there is no depot quartermaster in the vicinity, she will herself procure the necessary further transportation conformably to the provisions of paragraph 83*a*.

85. Travel to and from points beyond the limits of the United States and between island possessions will be by Army transport in all cases where practicable.

MEDICAL CARE AND TREATMENT.

86. A nurse is entitled to medical treatment while on duty. This will ordinarily be furnished at the hospital to which she is attached; but in proper cases the Surgeon General, or the department surgeon within his department, may order a nurse's transfer to and treatment in some other Army hospital. When the treatment required by a nurse on duty can not otherwise be had, the necessary civilian service may be employed as authorized by Army Regulations. Bills contracted by a nurse for medical care while on leave or absent without leave can not be allowed.

87. A nurse will not be discharged for disability contracted in line of duty until after reasonable time has been allowed for treatment.

88. Upon the arrival of a nurse at the first station to which she is assigned after her appointment, she will be vaccinated against smallpox. If the first vaccination is noneffective it will be repeated at the end of eight days.

(*a*) Existing orders require that all persons entering the military service be immunized against typhoid fever. (See Appendix: *Typhoid Prophylaxis.*)

(*b*) The date and result of the last vaccination against smallpox, and the date of the administration of each dose of the typhoid vaccine, will be indorsed upon the nurse's letter of appointment.

(*c*) The medical officer under whom a nurse is serving will be held responsible that she is properly protected against smallpox and typhoid fever in accordance with the above requirements.

LEAVE OF ABSENCE.

89. The leave year of a member of the Nurse Corps will be reckoned in each case from the date of her letter of appointment. A leave credit of two and one-half days for each month of completed service and leave with pay under her appointment will be allowed, against which will be charged all absence on leave with pay. Leave credits will not be allowed for periods of absence without pay. Unused leave credits may accumulate to an aggregate not exceeeing 120 days. Leave to the amount of the accumulated unused leave credits may be granted whenever the exigencies of the service permit. Final leave will be granted prior to discharge to the amount of accumulated leave credits. Extra leave of absence with pay on account of illness can not be granted.

(*a*) A leave credit accruing but unused under one appointment can not be carried over and become available under a subsequent appointment.

90. A nurse desiring leave of absence will apply therefor in writing, through the chief nurse, to her immediate commanding officer for his action conformably to the preceding paragraph. The original paper granting the leave will be given to the nurse.

91. Subject to the modification indicated in section (*a*) of this paragraph, when accumulated leave of absence with pay is granted to a nurse on service in Alaska or beyond the continental limits of the United States for the purpose of coming to and returning from the United States, the running of such leave shall be calculated between the date she reached or might have reached the United States and the date she left or should have left the United States via the usually traveled routes. If the nurse's return to service abroad is not required, the termination of her leave shall be calculated from the date she arrived or should have arrived in the Unted States via the usually traveled route.

(*a*) In the case of a nurse coming to the United States from or going from the United States to service in the Philippine Islands who desires to make the journey by a route other than the customary one in order to visit foreign countries on leave of absence while en route, an allowance of 30 days as on status of duty without right to reimbursement of traveling expenses will be made, in addition to the time granted as for leave of absence, to cover the average amount of time necessary to perform the journey from the Philippine Islands to the usual port of arrival in the United States or from said port to the Philippine Islands; and in calculating the running of her leave the said period of 30 days for travel shall in each instance be excluded.

(*b*) When leave with pay is granted a nurse on service in the Philippine Islands to be absent thereform other than to come to the United States, the running of such leave shall be calculated between the date of reaching Manila from her station and the date of leaving Manila in returning to her station.

92. Leave of absence without pay and allowances is permitted under circumstances indicated in Army Regulations; and may be granted in other cases when the conditions of the service are favorable.

93. Rescinded, the matter being covered by Special Regulations No. 41, Uniform Regulations. (*C. M. M. V., No. 8.*)

94. The nurse may procure her uniforms after she reaches her post of duty, where detailed instructions on the subject will be supplied her.

95. The indoor uniform, except the cuffs and apron, will invariably be worn during the hours of duty. The cuffs and apron will be worn when conditions indicate their need. Nurses not in uniform will not be allowed in the wards.

(*a*) The outdoor uniform will be worn at such times as the Surgeon General may prescribe. It may be worn at any other time when the nurse is not on duty. (*C. M. M. D., No. 3.*)

96. Nurses' uniforms soiled while on public duty will be washed as a part of the hospital laundry. (See par. 267.)

97. Rescinded, the matter being covered by Special Regulations No. 41, Uniform Regulations. (*C. M. M. D., No. 8.*)

REPORTS AND RETURNS.

98. A return of the Nurse Corps is required monthly from every hospital or other sanitary formation with which nurses are on duty or to which they are attached. It will be forwarded on Form 63, within five days after the end of the month covered by it, through the department surgeon to the Surgeon General, or in the case of independent commands direct to the Surgeon General unless otherwise ordered by him.

99. An efficiency report of nurses is required monthly on Form 62 from every hospital or other sanitary formation to which nurses are assigned or attached, and will include all the nurses on duty with or attached to the organization during the month or any part thereof. It will be prepared and signed by the chief nurse, if there is one, otherwise by the commanding officer, and will be forwarded by the latter within five days after the end of the month through the channels indicated in the preceding paragraph for the monthly return. A special efficiency report will be prepared in like manner for every nurse upon her departure from one station for another, showing where she has gone and the date of her departure, and will be forwarded in duplicate within five days after the change to the commanding officer of the hospital or other sanitary formation to which she has been transferred. Should two or more nurses make the same change at the same time a single special efficiency report covering them will be sufficient. A copy of each report will be retained by the commanding officer of the organization where it was prepared, and will be open to the inspection of only his chief nurse, his executive officer, and higher authority.

(*a*) A special efficiency report sent to a nurse's new station will be attached to the next monthly efficiency report from such station made after its receipt.

100. All changes in the personnel of the Nurse Corps by discharge, death, etc., all changes in the stations of its members by departure for or assignment to another hospital or other sanitary formation, or by arrival or assignment from another organization, and all other changes in their status (such as from present for duty to present sick; from present sick to duty; from present to leave of absence, specifying its duration; from leave of absence to present), including changes in assignments as chief nurses, will be reported on the day of the change through the department surgeon to the Surgeon General, or in the case of independent commands direct to the Surgeon General.

DUTIES OF CHIEF NURSES AND NURSES.

101. For duties of members of the Nurse Corps assigned to hospitals see paragraphs 311 to 315.

RESERVE NURSES.

(See par. 536.)

102. The enrolled nurses of the American National Red Cross Nursing Service will constitute the reserve of the Army Nurse Corps, and in time of war or other emergency may with their own consent be assigned to active duty in the Military Establishment. When the emergency necessitating the employment of reserve nurses is imminent, the Surgeon General will request the proper officer of the Red Cross Society to nominate from among the enrolled nurses qualified for the work to be done, as many as the Surgeon General may deem necessary to enable him to choose those for assignment to active duty.

(*a*) When called into active service they will be subject to all the established rules and regulations for the government of the Nurse Corps, and will receive the pay and allowances of nurses on the regular list.

(*b*) A reserve nurse will not be relieved from active service except by order or authority of the Surgeon General. Except in case of misconduct she will, if she so desires, be furnished travel orders to her home before the order of relief shall take effect. The provisions of paragraph 73*a* will apply to reserve nurses. Upon relief from active service the following form of indorsement will be placed upon the nurse's letter of assignment, if the same is available; otherwise a letter of equivalent purport will be sent her:

——— ———, 19—.

With the approval of the Secretary of War, and by order of the Surgeon General dated ———, 19—, the reserve nurse within named is relieved from active service in the Military Establishment, to take effect ———, 19—.

——— ———,
United States Army.

(*c*) When a reserve nurse is assigned to active service the Surgeon General will by letter promptly advise the proper officer of the Red Cross Society to that effect. When she is relieved from active service he will communicate that fact likewise by letter, stating the cause of her relief and whether her services have been satisfactory.

Civilian Employees.

(For Hospital Matrons, see par. 265.)

103. The employment of male nurses, of female nurses not in the Nurse Corps, of cooks, and of other civilians necessary for the proper care of sick officers and soldiers, is authorized in the annual appropriations for the "Medical and Hospital Department," under such regulations fixing their number, qualifications, assignment, pay, and allowances as may be prescribed by the Secretary of War. The pay of civilian employees, such as clerks, messengers, watchmen, packers, laborers, etc., in the administrative offices and supply depots of the Medical Department is provided for in the same appropriations

HOSPITAL EMPLOYEES.

104. The number and assignment of contract nurses, cooks, and other civilians employed at military hospitals for the proper care of the sick therein will be determined by the Surgeon General or, under his instructions, in the Philippine Department, by the department surgeon.

(*a*) Their qualifications for their respective employments will be ascertained by practical tests established from time to time by the Surgeon General.

105. Hospital employees whose pay does not exceed $60 a month may, under authority obtained from the Surgeon General, be selected by the medical officer in charge of the hospital; and they may be reduced or discharged by such officer as the interests of the service require. (See par. 318*c*.)

(*a*) When the circumstances of the employment make it necessary a ration may be allowed in addition to pay proper of $60 a month or less in conformity with Army Regulations.

106. Hospital employees whose pay exceeds $60 a month will be appointed by the Surgeon General, and will be rationed only under special authority from the Secretary of War. They may be reduced or discharged at the discretion of the Surgeon General as the interests of the service require. (See par. 318*c*.)

107. Such quarters as may be available will be furnished for the use of those employees whose constant presence at the hospital is necessary or appropriate.

DEPOT AND OFFICE EMPLOYEES.

108. Civilians employed in the supply depots and administrative offices of the Medical Department are of two classes: (1) Those whose duties are unskilled manual labor only; and (2) those of higher grade. The former are subject to Labor Regulations promulgated by the President. The latter are classified employees, subject to civil-service rules.

109. The Labor Regulations govern the employment of unskilled laborers in Federal offices in nearly all of the large cities of the United States. Where they are in force they must be strictly observed, whether the laborers are required for temporary or permanent work. To secure the services of laborers under the Labor Regulations application for the certification of eligibles should be made to the local board of labor employment.

110. The number and compensation of unskilled laborers and workmen in the depots and offices of the Medical Department are determined by the Surgeon General under the direction of the Secretary of War.

(*a*) No such workman or laborer will be permanently employed by the month without authority from the Surgeon General, nor at more than $60 a month without the special authority of the Secretary of War. They may be reduced or discharged at the discretion of the Surgeon General as the interests of the service require.

(*b*) In emergencies requiring prompt action, when the services of enlisted men are not to be had, laborers may be temporarily employed (under Labor Regulations, if applicable) without previous authority, at not more than 25 cents an hour.

(*c*) The employment of unskilled laborers or workmen in the Philippine Department will be supervised by the department surgeon under instructions from the Surgeon General.

111. When the position of an unskilled laborer or workman employed at $60 a month or less by authority of the Surgeon General becomes vacant the vacancy may be filled if necessary (under Labor Regulations, when applicable), without new authority, report of the changes to be made promptly to the Surgeon General.

112. Persons employed as unskilled laborers or workmen will not be assigned to work of the grade performed by classified employees.

113. Civilian employees in the depots and administrative offices of the Medical Department above the grade of unskilled laborer or workman are appointed by the Secretary of War, upon the recommendation of the Surgeon General, from the lists of eligibles furnished by the United States Civil Service Commission, or by reinstatements or transfers by the Secretary of War under civil-service rules. (But see par. 114.) Their number and compensation are fixed by the Secretary, and their promotion, reduction, and removal are determined by him, upon the Surgeon General's recommendation. Their assignments to and transfers between stations, at home or abroad, are regulated by the Surgeon General, under the Secretary's directions. (See par. 117.)

114. In case of a vacancy among them by death or otherwise, the officer under whom it occurs will promptly advise the Surgeon General whether it is necessary to fill the same, and if so will make such recommendation for promotion or original appointment as may be appropriate. Temporary appointments without examination and certification by the Civil Service Commission, pending permanent appointment, promotion, or transfer, are not made by the Secretary to any classified position except when the public emergency so requires, and then only upon the prior authorization of the commission. Appointments so authorized continue only for such period as may be necessary to make appointment through certification of eligibles or by promotion or transfer, and in no case without prior approval of the commission do they extend beyond 30 days from the Secretary's receipt of the certification, or (if the vacancy is to be filled by promotion or transfer) beyond 30 days from the date of the temporary appointment.

(*a*) When a classified position in the Philippine Islands becomes vacant it may be filled in the regular way, or if specially authorized by the Secretary of War, by appointment from the eligible lists of Philippine civil-service board.

115. Recommendations for the promotion of a classified employee should originate with the officer or officers under whose supervision and control the employee is serving. No recommendation originating otherwise will be considered. If the employee procures such recommendations to be made by any other person, his so doing will be cause for debarring him from the promotion proposed. A repetition of the offense will be sufficient cause for discharge.

116. Classified employees will be promoted, reduced, or discharged only by the Secretary of War; but the officer under whom they are serving may suspend them from duty and pay for cause. He will inform the suspended employee of the reasons for his suspension, and give him three days in which to answer the same in writing. Should the answer be satisfactory, he may at once without further action restore the employee to duty and pay. Should no reply have been received at the end of the three days, or should it be unsatisfactory, he will report his action, his reasons therefor, and his recommendations in the premises (together with the written answer received by him, if any) to the Surgeon General, for the information and action of the Secretary.

117. Clerks transferred to the Philippines will be allowed an increase of $200 in annual compensation, to take effect on the date of leaving station in the United States. Clerks transferred from the Philippines will be reduced approximately 20 per cent in compensation, provided such reduction does not lower their pay below the rate they were receiving for their former service in the United States (unless their efficiency record calls for a lower compensation). Such reductions will take effect on the date of arrival at the new station. Clerks so transferred forth and back will receive the regulation allowances of transportation and expenses en route between stations. No classified employee will be transferred from the United States to the Philippines, or vice versa, except upon authority of the Secretary of War previously obtained.

REPORTS OF CHANGES OF STATUS.

118. Every appointment, promotion, reduction, or discharge of a civilian employee, temporary or permanent, made by an officer of the Medical Department, will be reported promptly to the Surgeon General, with the name of the person concerned, the date of the change, and citation of the authority therefor. In case of death the date and place of death will be given; in case of death or discharge the date to which the employee was last paid, and by what officer. A record will be kept in each office of the name and address of the employee's nearest relative, who will be at once notified of the employee's death. (See Appendix: *Civilian Employees.*)

119. When a clerk is transferred from one office to another the officers concerned will report to the Surgeon General the date of his departure from the old station and the date of his arrival at the new. The officer at the old station will by letter inform the officer at the new station of the date to which the clerk was last paid.

EFFICIENCY REPORTS OF CLASSIFIED EMPLOYEES.

120. Every officer under whom classified employees of the Medical Department are serving will prepare and forward to the Surgeon General on June 30 and December 31 of each year a report of their efficiency during the preceding six months.

121. In determining the efficiency of each such employee the factors of attendance, ability, adaptability, habits, and application will be considered, and each marked separately on a scale of 100. Ability will be given four times the weight, adaptability twice the weight, and habits twice the weight of either of the other factors, which will each be given a weight of one. The final efficiency figure will be obtained by dividing by 10 the aggregate of the markings under the several heads, and will represent, so far as practicable, the record of each employee as made from day to day during the six months. In connection with ability, the character, quality, and quantity of work will be marked as indicated on the form. (Form 20, W. D.)

(*a*) The names in each class or grade will be entered in the order of merit, those with the same efficiency figure being arranged according to length of service in the Medical Department.

122. The following rules will be observed in keeping efficiency records and preparing semiannual reports thereof.

Attendance.—A record will be kept in each office upon which will be noted daily the duration of all absences from official duty on the part of persons whose names are to appear on the semiannual efficiency report. From the time record thus kept the figure of attendance to be used in the preparation of that report will be obtained.

A deduction of two points will be made for every three days' absence on leave without pay or on account of personal sickness which is accounted for and approved in accordance with the leave regulations: *Provided*, That absence on account of sickness may be disregarded in cases of special merit or where it would be manifestly unjust to include such absence in the calculation of the efficiency figures.

Deduction for absence without leave will be made at the rate of five points for each day, and further deduction will be made in the figure representing habits if required by the nature and degree of the offense. Tardiness will be considered in connection with habits, and if of frequent occurrence will be made the subject of special action as prescribed under that head.

Ability.—Wherever practicable a record will be kept of the amount and character of work performed each day by persons whose efficiency is required to be reported. The record of work for each six months will serve as a basis for determining the relative ability of the persons engaged thereon, proper deduction being made for all errors or deficiencies that may have been reported. The ability figure of those employed upon work that can not be tabulated or stated numerically will be determined by the chief of office upon his own observation and knowledge.

While the amount of work creditably performed is valuable as a guide in estimating ability, too much importance should not attach to this factor except as between persons employed in substantially the same way. Character and quality of work must be regarded as much more important than quantity, and, as these elements can not be ascertained by any automatic process or be stated numerically from day to day, the opinions of officers and supervising clerks, who by constant association and observation acquire intimate knowledge of the personnel of their own office, must be relied upon to a great extent to determine the relative merits of the individuals employed under their direction.

When clerks of a particular class perform satisfactorily work of a grade usually assigned to a higher class great credit should be given therefor. If for lack of ability clerks are employed upon work usually assigned to a lower class, the marking should be correspondingly low, although the work itself may be exceedingly good.

Adaptability.—Under the head of "Adaptability" there should be considered intelligence, aptitude, fitness for the general duties of an office, and demonstrated capacity for the performance of a higher class of work. As in respect of ability, these elements will be weighed and the figure of adaptability determined therefrom by the chief of office, assisted by recommendations of officers and others in supervising positions.

Habits.—In estimating habits consideration should be given to sobriety, integrity, subordination, cheerful and zealous obedience to orders and regulations, and promptness and courtesy in all the relations of official business. The rating will be made in the manner prescribed for ability. Insubordination, disregard of regulations, frequent tardiness, drunkenness on duty, or any conduct prejudicial to the good order and discipline of an office should be made the subject of special inquiry and action as directed in regard to absence without leave.

Application.—Under the head of "Application" should be represented the degree of diligence and faithfulness which has been shown in respect of attention to duty, the rating to be made in the manner prescribed for ability.

123. The following special rules respecting the ability and adaptability marks of clerks will also be complied with:

(*a*) Rate no clerk higher than 95 in either ability or adaptability.

(*b*) Rate no two clerks at the same ability figure unless they are clearly of equal ability, and in no case rate three or more in the same grade in the same office at the same ability figure, unless they are employed on tabulated work which determines the figure.

(*c*) Rate no one at a higher figure in adaptability than in ability.

(*d*) Whenever two are rated at the same figure in ability, distinguish between them by rating one at least one-half (five-tenths) of a point less in adaptability than the other. If no other ground for this difference is apparent, let it be based on the length of service in the present grade, the one having the shorter term of such service getting the lesser adaptability.

(*e*) Assign no clerk a higher figure in either factor than is warranted by his actual efficiency, as compared with that of the other clerks of the same grade in the office during the period of the list and at the end thereof, regardless of any higher figure that may have been assigned to him on any previous lists.

124. Each semiannual efficiency list should show the relative standing actually earned by each employee of the office as compared with fellow employees during the half year covered by it, regardless of his standing on any prior list. It does not follow because an employee's absolute efficiency remains unchanged that he should retain the efficiency ratings previously given him; other employees in the meantime may have shown such increase in efficiency that they are justly entitled to precede him in relative standing. The efficiency figure of any employee, as well as the figures representing the factors composing it, being thus relative only, must necessarily change from time to time, even in the case of an employee whose actual efficiency remains unchanged. Each efficiency list displaces and supersedes the prior list, and should represent the relative values of all the employees thereon for the period covered by the list and at the end of that period, regardless of what their relative values were on previous lists. Officers will bear these considerations in mind in preparing the efficiency lists in question.

125. All promotions in the classified service will be made in the order of merit as established by the last semiannual efficiency report, subject to such examination as may hereafter be ordered under civil-service rules: *Provided,* That any person entitled to promotion under the terms of this regulation who shall become markedly inefficient, or be guilty of any serious misconduct after the preparation of the last semiannual efficiency report, shall forfeit the right to promotion, and the same shall accrue to the next eligible person on the list.

126. Those who fail during any six months to attain an efficiency rating of 70 will be regarded as deficient in their respective classes and subject to regrading, and will, in the discretion of the officer under whom they are serving, be reported to the Surgeon General for reduction. All who, on two consecutive reports, fall below 70 in efficiency will be invariably reported for reduction.

All who, on two consecutive reports, fall below 60 in efficiency or below 50 in either application, habits, or ability will be reported for discharge.

In the case of those entitled to preference under section 1754, Revised Statutes, the figures 65, 55, and 45 are substituted for 70, 60, and 50, respectively, in the two preceding paragraphs.

127. The semiannual efficiency reports in each office will, if practicable, be placed where access to them can be had by all concerned; but where, by reason of the large number or widely separated locations of those interested, material interference with current work and loss of time would be occasioned by allowing each individual access to the reports, a transcript from the semiannual report will be forwarded to each person whose name is borne thereon as soon as practicable after the completion of the report. This transcript will show the efficiency rating and lineal number, or relative standing, of the person to whom it is furnished.

128. A copy of each semiannual efficiency report will be forwarded by the Surgeon General to the Secretary of War as soon as practicable after the expiration of each six months.

LEAVES OF ABSENCE.

129. Regulations governing leaves of absence of civilian employees are published in special circulars by the War Department. (See Appendix: *Civilian Employees.*)

REPORTS OF EMPLOYEES INJURED.

130. Regulations governing the operation of the Government "Compensation Act" for employees injured in the service of the United States, are published in special circulars by the War Department. The Surgeon General will on application furnish appropriate forms for the necessary reports. (See Appendix: *Civilian Employees.*)

INSTRUCTIONS PROMULGATED BY THE SURGEON GENERAL.

COMMISSIONED PERSONNEL.

Appointments in Medical Reserve Corps.

The requirements for appointment are that the applicant be a citizen of the United States, between 22 and 55 years of age, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine; he must have qualified to practice medicine in the State in which he resides, and be in the active practice of his profession.

The examination is physical and professional; the professional examination is oral. In case the oral examination is not satisfactory to the board, the applicant will be given a written examination. In all cases the examination will be in the following subjects:

1. Practice of medicine, including etiology, clinical description, pathology, and the treatment of diseases.
2. Surgery—principles and practice.
3. Obstetrics and gynecology.
4. Hygiene—personal and general, especially as to the prophylaxis of the more prevalent epidemic diseases.

Specialists will be examined in their specialty.

When a candidate reports to the board of examination, he should submit the following:

1. His personal-history blank properly filled in as indicated therein and certified to before a Notary Public.
2. Two testimonials from reputable persons as to his citizenship, character, and habits.
3. A certified copy of his license to practice medicine in the State in which he resides.

The act of June 3, 1916, creating the Medical Reserve Corps Section of the Officers' Reserve Corps of the Army provides that in time of peace only those of the grade of first lieutenant may be ordered to active duty, and this with their own consent, but in time of war the services of officers of all grades are at the disposal of the Government.

The pay of officers in the Medical Reserve Corps is the same as that of corresponding grades in the Regular Army.

(*Form F, Information relating to appointments in the Medical Reserve Corps Section of the Officers' Reserve Corps of the Army. Undated.*)

Instructions to Officers of Medical Reserve Corps Before Called to Active Duty.

1. You may not be ordered to active duty immediately after accepting your commission, so do not relinquish your private practice for the present. Fifteen days' notice will be given before the first call. You should, however, at once provide yourself with the following articles of uniform, so as to be in readiness to obey orders: 1 hat, service; 2 breeches, service O. D.; 1 coat, service, O. D.; 1 leggins, leather, officer's; 2 pairs shoes, russet; 2 shirts, woolen, O. D.; 1 sweater, Army; 1 slicker, saddle; 1 hat cord, officer's; collar insignia and insignia of rank; 1 notebook, manifolding pocket; 1 compass; 1 watch. You may use your own underclothing, socks, handkerchiefs, and toilet articles. Additional articles to the above list can be purchased later.

2. Provide yourself with 1 bedding roll; 2 Army blankets; 1 sleeping pad (or two comforters); 1 mosquito bar, cot; 1 canvas basin; 1 canvas bucket; 1 collapsible candle lantern; 1 folding camp chair. These are sold by private dealers. If possible, provide yourself with a trunk locker, Army pattern, sold by the Quartermaster's Department or private dealers.

3. Your necessary mess equipment includes 1 canteen, Cavalry; 1 canteen strap, Cavalry; 1 cup; 1 knife; 1 fork; 1 spoon; 1 meat can.

You can purchase these from the ordnance officer at the nearest military post; or write to the commanding officer, Rock Island Arsenal, Rock Island, Ill., for the necessary vouchers and costs. Private dealers also sell them.

4. Horse equipment, including spurs, if needed, may be drawn without cost from the Ordnance Department on memorandum receipt, on joining your first station.

5. The shelter tent halves, poles, and pins you will need can be drawn from the Quartermaster's Department on memorandum receipt at your first station.

6. If the Government calls you out, it needs your services at once. Promptly obey your orders to report for duty on its receipt. Only the War Department can authorize delay.

7. When ordered to active duty you should at once report your departure by letter to the Surgeon General's Office, and immediately upon any change in station or status report the same to the Surgeon General, stating authority therefor, with number, date, and source of the order making the change.

8. Buy your ticket from your home to your station. You will later be reimbursed at the rate of 7 cents per mile if traveling without troops. If there is any Army quartermaster in the vicinity, see him, for there are a few land-grant railroads over which the Government issues transportation without cost to you, and over which you accordingly draw but 4 cents per mile in mileage.

(*Cir. No. 18, to all officers of the Medical Reserve Corps, Surgeon General's Office. Undated.*)

Assignment of Personnel to Hospitals.

1. Original assignments of Medical Reserve Officers to base hospitals have been made by the Surgeon General's Office in order that these officers might be assigned duty most suitable to their training and further with a view to the most economical and uniform assignment of material available in order that well-balanced staffs might be obtained.

2. Preliminary assignments are now complete with a few exceptions. Some of the officers assigned have been found unadapted to service at a base hospital, and it is expected that others will have to be reassigned or placed on the inactive list.

3. In the future, officers assigned to base hospitals will in general be men not suitable for active field service. There will be assigned, however, a certain number of men for instruction in base hospital work who will later be utilized in the organization of base hospitals for service abroad.

4. Such clinics, lectures, classes, and study as are necessary for the training of commissioned and enlisted personnel in base hospital work will be instituted at an early date. An outline of instruction which may be given by the special branches will be sent, for use by the commanding officer, base hospital, in arranging the general course on instruction.

5. Officers assigned in the various specialties by War Department order have been carefully selected, and with few exceptions will be found competent in their accredited work. These officers are expected, however, to perform any and all duties assigned them by the commanding officer, base hospital, in order that they may develop into well-trained medical officers so necessary for the success of base hospitals here and abroad.

(*Letter to Surgeon General's Office, October 15, 1917*)

Examination for Standing in Veterinary Corps.

1. Under authority of General Orders, No. 130, the Veterinary Corps, is entitled to one veterinary officer and 16 enlisted men for each 400 animals in public service. The commissioned personnel shall consist of veterinarians and assistant veterinarians. Grades and ratios to be as follows: Seven per cent majors, 20 per cent captains, 36 per cent first lieutenants, and 37 per cent second lieutenants. There are at present a limited number of vacancies for grades above that of second lieutenant. It is proposed to fill some of those higher grades by a competitive examination. You are instructed to present yourself at the place and time specified to take such an examination. In grading your papers, special consideration will be given to your administrative ability, professional training, age, length and character of previous service, and letters of recommendation which you have already filed. Satisfactory service in the Regular Army, National Guard, drafted into the Federal service, Officers' Reserve Corps in active service, and qualified veterinarians from civil life who have already filed satisfactory applications will receive preference in the order above specified.

(*Letter to all Army veterinary officers, Surgeon General's Office, November 20, 1917.*)

Date..

Name.................................... Address..

Information and experience.

Length of veterinary service in:
(*a*) Regular Army..
(*b*) National Guard..
(*c*) Reserve Corps..
(*d*) General practice..
(*e*) Official positions held...

1. Give character and length of previous military training outside of veterinary service.
2. How, in your opinion, should an Army veterinary service be organized?
3. What are the principal objects of an Army veterinary service?
4. What is the most common disease of newly purchased Army horses?
    (*a*) Give causes, prevention, and treatment, under Army conditions.
5. What do you consider should be the qualifications of an officer in the veterinary service of the United States Army?

NOTE.—Each of the five preceding questions to be answered on separate sheets of paper. Examination to be conducted by surgeon in charge, and at conclusion of examination all papers, including information sheet, to be handed to him inclosed in a sealed and marked envelope.

Information sheet and examination questions for rating of standing of all officers below rank of major in the Veterinary Corps, National Army.)

Medical Corps.

1. The Surgeon General directs that you bring to the attention of medical officers now serving under you the desirability of the Regular Medical Corps as a career. There are approximately 1,000 vacancies in the corps at this time and it is desirable that these vacancies be filled at the earliest practicable date. With this object in view he desires that you give personal attention to the matter.

2. The following general qualifications for appointment should also be fully explained:

No applicant may be commissioned in the Medical Corps of the Army unless he is between 22 and 32 years of age, a citizen of the United States, and a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine. At the present time he must have had also at least one year's hospital training subsequent to graduation, including practical experience in the practice of medicine, surgery, and obstetrics, and will be expected to present evidence to that effect.

3. A supply of circulars of information and personal-history blanks are forwarded herewith. Applications should be sent to this office and, if approved, an invitation will be extended to the applicant to appear for preliminary examination before a board which will be convened for the purpose at your camp.

4. The Surgeon General requests your earnest cooperation in this matter.

(*Cir. Letter, Surgeon General's Office, November 21, 1917.*)

Efficiency of Commissioned Officers of the Medical Department.

1. Your attention is invited to section 9, Bulletin 32, which provides that "the general commanding any division and higher tactical organization or territorial department is authorized to appoint from time to time military boards of not less than three nor more than five officers of the forces herein provided for, to examine into and report upon the capacity, qualification, conduct, and efficiency of any commissioned officer within his command other than officers of the Regular Army holding permanent or provisional commissions therein."

2. All medical, dental, and veterinary officers of the Reserve Corps and medical officers of the National Guard in your command who do not show the proper capacity, qualifications, or efficiency for commissioned officers should be brought before this board at once.

(*Cir. Letter, Surgeon General's Office, November 28, 1917.*)

Instruction, Transfer, and Elimination of Medical Officers not Rendering Competent Service. (See also Training.)

1. It is recognized that a proportion of medical officers now in service are not fully qualified to perform the multifarious and important duties of their positions. The disqualification is due in most instances to physical disability, mental incapacity, temperamental unfitness, slothfulness, inability to command men, or to lack of education or proper training. In some instances it may

be only apparent or relative, and due to the fact that the individual is for the time being a square peg in a round hole.

2. The courses of instruction in the medical officers' training camps, as laid down in Special Regulations No. 49*a;* that prescribed for departments by circular letter of May 14, 1917, to department surgeons by the circular letter from this office to division surgeons dated October 3; and that prescribed for base hospitals in the letter to commanding officers of base hospitals of November 1 have done much and should do more to correct the deficiencies, especially such as are due to other causes than mental incapacity.

3. The number of officers incompetent because of actual physical or mental incapacity is probably relatively small, but it is important that they be eliminated from the service. It is equally important that those incompetent from other causes be made competent or eliminated.

4. It is therefore directed that division surgeons, commanding officers of base hospitals, and other medical officers having subordinates, at once list all of their subordinates whose work is not reasonably good, inform them of the contents of this letter, make or have made in each case inquiry as to why the work is not good, and take such of the following steps as may be necessary:

(*a*) If mental incapacity be suspected, the subject will be given a psychological examination on lines and forms prescribed from this office, this to apply until such time as routine psychologic examinations are begun on all officers going to training camps.

(*b*) In order to fit mentally capable men into jobs suited to their capabilities, they will be tried in work other than that in which they have failed. Thus a man whose ward work in a base hospital is quite unsatisfactory may be given a trial in some detail requiring business training, if he has such, or with a field or transportation unit; a man failing or doing poor work in a transportation unit may be given a trial at ward work, and so on. To enable this arrangement to be carried out, division surgeons and adjacent base hospital commanders will arrange for the temporary exchange of such number of medical officers as may be necessary for the purpose.

5. However, a considerable amount of incompetency is due to poor training in the technique of professional work and a small amount of time systematically spent in instructing certain men in good routine methods of physical examination and history taking may prove sufficient to render them competent. It is therefore directed that no man be exchanged as incompetent until his superior officer (in a base hospital or regiment the chief of his service, in a transport unit his commanding officer) certifies that he has personally given the man proper instruction in technique and is convinced that the man is not capable of becoming competent in that line of work within a reasonable time.

6. Men exchanged will be given proper instruction in the methods and details of this new work, will be assisted in its performance for a reasonable time, and will be saved to the service if they show capacity and if education can save them.

7. Men who by reason of physical or mental incapacity, viciousness, or laziness can not be made competent officers must be eliminated from the service. They should be ordered before a board convened for their discharge under the terms of Bulletin 32, paragraph 9, War Department, 1917, and reported to the Surgeon General as unfit. However, no action will be taken under this paragraph unless the application therefor is accompanied by at least two of the certificates mentioned in paragraph 5 of this letter.

8. Department surgeons will carefully inquire into the qualifications of the medical officers within their jurisdiction. Such as are apparently unsatisfactory will be reported to this office, with request that they be transferred to a base hospital or division with a view to testing out their fitness for service in accordance with the terms of this letter.

9. Commanding officers of general hospitals who have subordinates not regarded as suited to hospital work, but who might be used for field work, will report them by name to this office with recommendation for their transfer to divisions.

(*Cir. Letter, Surgeon General's Office, December 1, 1917.*)

Commissioning of Applicants Born in an Alien Enemy Country, or in a Country Allied Thereto.

1. The recent ruling of the Secretary of War prohibiting the commissioning in the Army of men born in an alien enemy country or in a country allied thereto has been amended so as not to include those who emigrated to this country prior to the age of 5 years and are fully naturalized and of approved loyalty. The following is quoted from a letter from The Adjutant General of the Army, dated June 24, 1918.

(1) The Secretary of War directs that applicants born in an alien enemy country or in a country allied thereto who emigrated to the United States prior to the age of 5 years and who are of approved loyalty to the United States and who are United States citizens, either through their own naturalization or that of their parents, shall be deemed eligible for commissioned service in the Army of the United States.

(2) Before applicants who are in the above class are recommended for appointment or before they are admitted to a course of training looking to their appointment as officers, a thorough investigation will be made as to loyalty, antecedents, ties with country of birth, ties of kin and of business, etc., and no applicant will be considered who is questionable.

(3) Applicants of this class will submit satisfactory proof that they emigrated to the United States prior to the age of 5 years.

2. You are hereby authorized to examine such applicants for appointment in the Medical Reserve Corps, but before forwarding their papers to this office you should make an investigation, as far as you are able to do so, as set forth in paragraph 2 of this letter from The Adjutant General of the Army. Upon receipt of their papers, further investigation will be conducted by agents of the War Department before they are recommended for a commission.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Dental Service.

1. A form similar to the sample attached is to accompany hereafter the Consolidated Monthly Report (Form 57).

2. When space permits, the report referred to may be placed on the back of the monthly report under the heading "Remarks." When space does not permit, it is to be made out on a separate sheet and attached to the monthly report.

3. The monthly report should be mailed not later than the fourth day of each month and addressed to the Surgeon General, U. S. A., Dental Division, Washington, D. C.

4. Actual working days should include the total days the dental officer was on duty.

5. "Efficiency" should be the estimate of the qualifications of the dental officer as viewed by the dental officer in charge, and marked as follows:

(1) Excellent.
(2) Good.
(3) Fair.
(4) Poor.

6. Half days should be counted as half days *only* on the individual officer's report.

7. Under the heading "Remarks" on the back of the Consolidated Monthly Report (Form 57) should be noted:

"All the dental officers of this command are familiar with paragraphs 1398 and 1401, Army Regulations, and have complied with said Regulations."

(*Dental Letter No. 6 to all officers of the Medical Department concerned, Surgeon General's Office. Undated.*)

Promotions in the Medical Reserve Corps.

1. Individual applications for promotion of officers of the Medical Reserve Corps will be disapproved. At such intervals as you think advisable, recommendations should be submitted for the promotion of deserving officers to fill existing vacancies. If you consider an examination of professional and military subjects necessary to enable you to arrive at proper conclusions in making your recommendations, such examination may be prescribed. The reports of these examinations should not, however, be forwarded to this office as the department, in making its recommendations to the Secretary of War, will be governed largely by the recommendations submitted by the candidates' superior officers.

2. There are a number of officers in the Reserve Corps over 35 years of age and well qualified professionally who were given original commissions in the grade of first lieutenant because the department did not have sufficient information concerning them to make it safe to give them original appointments in a higher grade. Such men should be considered as eligible for promotion to a captaincy after they have been on active duty sufficiently long to demonstrate their adaptability to military service and their usefulness to the Government. Recommendations for the advancement of such officers will be entertained after a minimum of three months' active service.

3. Only in very exceptional instances should officers within the draft age be recommended for increased grade until they have had at least six months' active service, and then only if specially qualified.

4. Recommendations for the grade of major should only be made if there is a position vacant under your jurisdiction which ordinarily carries that grade and after the individual has been thoroughly tried out and you are assured that he is fully capable of filling the position.

5. All recommendations for the promotion of officers of the Reserve Corps should be forwarded through channels, and should recite the officer's age, length of active service under his present commission, total length of active service, his special qualifications for the grade recommended, and the formation to which he belongs, together with the number of officers of the rank for which the candidate is recommended already in such formation.

6. A conservative policy should be adopted in making recommendations for promotion, giving full recognition to age and seniority of service when practicable.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Sanitary Officers.

1. In order to provide adjutants, registrars, and mess officers for overseas hospitals in accordance with Tables of Organization, which prescribe that these positions may be filled by officers of the Sanitary Corps, it is proposed to carry out the following plan:

2. Boards will be convened immediately by officers to whom this circular is addressed for the examination of such men as may now be qualified to fill these positions. The scope of this examination will be such as to determine whether or not the candidate is actually qualified to fill one of the positions mentioned in paragraph 1. In this connection the chief consideration should be the man's fitness as demonstrated by past and present performance of duties. It is realized that the best noncommissioned officers, particularly those of long service in the Medical Department, have already been commissioned in the Sanitary Corps, but there undoubtedly remains a scattering of competent men, some of long service, and a few more recently enlisted, but of proven character and capability, whom it is desired to commission at once for overseas units now mobilized or mobilizing. It is particularly desired to commission men who have served or who may now be serving satisfactorily as chief clerk, mess sergeant, or in the registrar's office. Blank forms for this examination and complete instructions as to eligibility of candidate are inclosed herewith. It can not be too strongly urged that these instructions be complied with to the letter, in order that delays may be avoided.

(*a*) Completed papers for all candidates examined by each board will be forwarded in one wrapper to this office, attention Lieutenant Colonel Hart. This will be accompanied by list of the men recommended for the various positions in the order of their desirability as follows:

List of candidates recommended for commission, complete papers of which are inclosed herewith.

CAMP..

For adjutant.	For registrar.	For mess officer.
1. Name.............................. 2. Name.............................. 3. Name.............................. Etc.	1. Name.............................. 2. Name.............................. 3. Name.............................. Etc.	1. Name.............................. 2. Name.............................. 3. Name.............................. Etc.

3. For the filling of vacancies in overseas organizations soon to be mobilized, men will be selected and assigned as assistants to the adjutant, registrar, and mess officer in base or other hospitals, and given intensive instruction each in the duties of the office in which it is proposed to place him when commissioned. The following considerations should govern the selection of such men:

(*a*) They should be picked, preferably from the noncommissioned grades of the Medical Department.

(*b*) Moral character must be assured.

(*c*) Educational advantages: It is desired to have men who are at least high-school graduates; and for adjutants, college men should be selected, if possible.

(*d*) General intelligence, adaptability, and promise of future attainment.

(*e*) They must meet the requirements as per instructions inclosed herewith.

4. From one to three such men (the number will vary with the size of the hospital and facilities for instruction) should be placed in each of the offices mentioned above, and instruction imparted by the officer and noncommissioned officers in charge, under the direction of the commanding officer. The instruction should be competitive. To this end the candidates will be told that only those who show the greatest proficiency will be commissioned.

5. This office will be furnished the names of men selected and assigned for instruction, and on a separate list the names of those eligible for but in excess of the number for whom instruction can be provided. Surgeons of small posts or other Medical Department organizations or detachments where instruction would be impracticable will submit the names of men of unusual promise in their commands, in order that they may be transferred to other stations for instruction. This office will be kept advised of the following:

(*a*) Men dropped from or added to the instruction course.

(*b*) Additions to or deductions from list of men eligible for but not undergoing instruction.

6. The length of the training course can not be fixed, as it must of necessity vary with the intelligence of the candidates and the demand for sanitary officers. The immediate vacancies will be filled in accordance with paragraph 2 of this circular—those occurring later by graduates of the training course, who should be examined and recommended for commission as rapidly as they are found qualified. Blank forms for their examination will be supplied at an early date.

7. There are at present approximately 400 vacancies for Sanitary Corps officers in overseas base and evacuation hospitals, 100 of which must be filled at once, in accordance with paragraph 2 of this circular. It is hoped that one or two men can be recommended at once from each base hospital and from other Medical Department organizations in proportion to the size of their detachments. The remaining 300 vacancies will be filled by men who have received instruction, the quota from each organization being three times that mentioned above. These figures are of course approximate and will vary with the scarcity or abundance of good men. The chief aim is to secure the very best men in the Medical Department.

Instructions for examining boards for Sanitary Corps officers.

1. The following records will accompany every recommendation for commission in the Sanitary Corps:

(*a*) Record of examination for the Sanitary Corps. Indicate on this form whether candidate is best qualified for adjutant, registrar, or mess officer.

(*b*) Report of physical examination.

(*c*) Application for appointment in the Sanitary Corps, properly filled out. Attention is particularly directed to paragraph 24 of this form, requiring consent of commanding officer and commanding general for transfer or promotion, and to paragraph 6, requiring documentary evidence of naturalization.

(*d*) At least two recommendations from reputable citizens. One of these should be from the candidate's immediate commanding officer.

(*e*) An expression from the immediate commanding officer of the candidate as to whether he would be willing to have him serve in his organization as an officer of the Sanitary Corps.

(*f*) Evidence as to whether the applicant has been rejected for commission in any branch of the military service or has another application for commission pending.

2. The following will not be considered for commission:

(*a*) Natives of Germany or her allies.

(*b*) Men who have been in the military service less than three months.

(*c*) Men under 21 years of age.

3. Officers of the Sanitary Corps can not be assigned to duty with the organization with which they were serving when commissioned.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Physical Examination of Applicants for Commission.

1. The following letter from The Adjutant General of the Army to the Surgeon General, under date of October 17, 1918, is quoted for your information and guidance:

> 1. The Secretary of War directs that the personnel of all permanent medical examining boards, as well as all camp and post surgeons located in the continental United States, be instructed to assist and cooperate with, to the fullest extent, the Personnel Branch, Operations Division of the General Staff, in connection with the physical examination of applicants for commissions in the Army.

2. The Personnel Branch has established district examining boards with headquarters in the following cities: Boston, New York, Philadelphia, Atlanta, Cleveland, Kansas City, St. Paul, Chicago, San Francisco, Los Angeles, Portland, and Dallas. Each district will be in charge of a district officer, who will have associated with him one of the medical officers recently designated by you. These district medical officers will supervise the physical examination of all applicants within their respective districts and will need to call upon such of the medical personnel mentioned in paragraph 1 above as may be located within their districts to conduct the actual physical examinations.

3. Each applicant whose application has been approved will be given a request for physical examination, addressed to the nearest medical examining agency. No formal proceedings are required other than the accomplishment of Form 395, A. G. O., and paragraph 15 of the application blank, which latter will accompany the applicant.

Harry Davis,
Adjutant General.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Qualification Card.

1. Your qualification card, Form C. C. P.–1101, is not on file in the office of the Surgeon General, although your quarterly rating has been duly received.

2. You are directed to fill out inclosed card, bearing a serial number, giving your full name, printed legibly (no initials), and all other detail on the blank except the ratings and signatures of rating officers which are already on file.

3. These instructions will be complied with at once.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Commissions in the Medical Department.

1. The papers in connection with your application for a commission in the Medical Department have been received, but, owing to the recent ruling of the Secretary of War that the issuance of commissions be discontinued, no recommendation for your appointment can be made for the present. If at a later date authorization for additional commissions is received, and you still desire a commission, upon request to this office your case will be reopened.

2. The newspapers will probably be kept informed by the War Department and will publish any new decision that may be made in regard to appointments.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Transfer of Medical Officers.

1. The last sentence of paragraph 4, section B, of letter from the Office of the Surgeon General, dated December 14, 1917, subject, "Instruction, Transfer, and Elimination of Medical Officers not Rendering Competent Service," is hereby rescinded.

2. Section C of paragraph 3, letter from the Office of the Surgeon General, dated December 14, 1917, subject, "Practical Training of Substandard Officers," relates to the assignment of medical officers to base hospitals or other units by the Surgeon General.

3. In the future, when transfers of medical officers to or from duty in base hospitals are considered desirable, recommendation therefor will be made to the Surgeon General through proper channels.

(*Cir. Letter, Surgeon General's Office, March 30, 1918.*)

Increase in Medical Personnel, Establishment of Camps, etc.

1. It is proposed, for the purpose of better meeting the conditions that now confront the Medical Department of the Army and the conditions which will have to be met later, to organize a Division of Hospitals, Sanitary Inspection, and Medico-Military Training along the lines indicated below. The necessity for such an addition to the working personnel of this office at this time is considered absolutely essential to the end that proper provision may be made for the future care of sick and wounded soldiers of the United States.

Division of Hospitals, Sanitary Inspection, and Medico-Military Training.

(1) Chief of division, with rank of brigadier general.

(I) *Hospitals.*—A medical director of hospitals who would be charged, under such instructions as may be received from the Surgeon General, with the construction, direction, and coordination of all military hospitals in the service of the United States, and of such voluntary hospital aid, not a part of the military forces of the United States, as might, under the approval of the Secretary of War, be deemed necessary by the Surgeon General.

(II) *Sanitary Section.*—(*a*) One chief sanitary inspector, with rank of colonel. The duty of the chief sanitary inspector would be to cooperate with other staff departments with a view to coordinating all work connected with the health and physical efficiency of the soldier, particularly in the matter of kitchens, mess shelters, ice boxes, latrine construction, and all necessary sanitary appurtenances. He should, under such instruction as he may receive from the Surgeon General, acting under the authority of the Secretary of War, make such additions or amendments to existing sanitary orders as may be called for in the interests of the service. He should also supervise and inspect the work of the general sanitary inspectors, under such orders as he may receive from the War Department.

(*b*) A corps of general sanitary inspectors, with rank of colonel or lieutenant colonel. A general sanitary inspector should be attached to the staff of the commanding general of each Army. He should be charged solely with all matters pertaining to the sanitary service of the Army, and should make reports monthly, or oftener if necessary, through the commanding general, to the War Department.

(III) *Training section.*—(*a*) One chief inspector-instructor of medico-military training, with rank of colonel, whose duty it would be to inspect and supervise the instruction and general military training of all medico-military units or persons enrolled for or mustered into the service of the United States, under such instructions as he may receive from the Surgeon General of the Army, acting under orders of the Secretary of War.

(*b*) A corps of assistant inspector-instructors. The duties of the assistant inspector-instructors would be such as might be outlined from time to time in orders from the War Department governing the conduct of medico-military camps of instruction.

As soon after enrollment as their services can be spared from recruiting or other preliminary duty, all officers of the medical section of the Officers' Reserve Corps will report in turn, as their services can be spared, at such camps as may be designated for a three months' course of instruction, the scope of which will be fixed by the Surgeon General.

(2) The attached scheme affords a plan for starting, without delay, the necessary training of the officers and men of the Medical Department. It can be modified later as experience may warrant. It proposes to carry out an intensive training of both officers and enlisted men, both in special training camps and in addition to necessary service with troops. For the former class, the course covers three months; for the later, six months.

(3) The nature and scope of the proposed course, sample daily routine, list of textbooks, etc., are given therein.

(4) For the above instruction purposes, it is believed that four medical training camps should be established. The Medical Department, among other cogent reasons, can not furnish instructors or equipment for more than this number. They should be established in conjunction with the general officers' training camps at Fort Oglethorpe, Fort Riley, Leon Springs, and Fort Benjamin Harrison, and later, if found desirable, one on the Pacific coast; but if a suitable camp and maneuver ground can be found on the Atlantic seaboard south of New York, this should be substituted for Fort Benjamin Harrison.

(5) If approved, I recommend that the necessary facilities for shelter, messing, supply, etc., be provided without delay for the use of these training camps at the above points.

(6) Authority is also requested for the bringing to these training camps of a training staff of approximately one officer instructor to each 50 student officers, together with such enlisted personnel as may be necessary.

(7) I also request that one ambulance company and one field hospital be sent to each of these training camps, and that three additional ambulance companies and three additional field hospitals be organized at each without delay. Also that each training camp be further provided with an enlisted force equivalent to six regimental sanitary detachments. The above personnel is necessary to visualize medical organizations, equipment, and field work, and serve as a service corps in looking after the training camp and the many hundreds of student officers to be in attendance.

(8) Authority is further requested for the establishment of a training course for the sanitary personnel with troops, the appointment of officers as training officers with divisions or separate camps, and the establishment of a system of inspection sufficient to insure the efficiency of the same.

(9) It is requested that this matter be given decision as soon as possible. It is understood that the general training camps are to begin operation on May 15. The Medical Department should begin its work at least by that time, and if possible one or more of its camps should be put into operation before that time.

(10) Attention is invited to the fact that the work of the Medical Department actively begins the moment troops are raised or brought together, and that the equipment of these training camps, the detailed organizations of the training course, and the provision of the staff of instructors should therefore be made as soon as possible.

(11) Attention is invited to the attached plan, which is concurred in.

[1st ind.]

War Dept., A. G. O., May 11, 1917.

To the Surgeon General, with the information that the establishment of additional subdivisions of the work in the office of the Surgeon General, as referred to herein, is approved with the following exceptions:

That no increase in the Medical Corps in number of grades shall accrue therefrom;

That the chief of the sanitary section may consult with, and make recommendation to the Quartermaster General in regard to construction of a sanitary character, and may also recommend sanitary orders, but all orders will be issued in the way now prescribed by regulations; and

That four medical training camps to begin June 1, 1917, with an attendance of officers for training at each to be not over 600, are approved; and that the tentative scheme of instruction is approved and will be submitted in form to be published as a general order.

In this connection attention is invited to copy of letter sent to commanding generals, Central, Southern, and Southeastern Departments, relative to the establishment of the medical training camps referred to above.

(*Letter to Adjutant General of the Army, Surgeon General's Office, April 21, 1918.*)

Report of Personnel.

1. You are directed to prepare and submit to this office (attention Lieut. Col. W. L. Hart) a report of personnel, using the inclosed blank form as a model. These reports will be submitted on the 5th, 15th, and 25th of each month and will supersede those made under previous orders.

(*Cir. Letter, Surgeon General's Office, April 22, 1918.*)

Report of Personnel.

1. With reference to letter from this office dated April 22, "Report of Personnel," inclosing blank form as a model. The names of all officers on duty with ambulance companies and field hospitals should follow that of the commanding officer in order of rank.

(*Cir. Letter, Surgeon General's Office, April 24, 1918.*)

Adjutants, Registrars, Mess Officers.

1. It is desired that the names of enlisted men of the Medical Department, now on duty at your hospital and whom you consider have the qualifications necessary for duty as adjutant, registrar, or mess officer, be submitted to this office, attention of the Hospital Division.

(*Cir. Letter, Surgeon General's Office, May 29, 1918.*)

Use of Political Influence.

The following from The Adjutant General of the Army, under date of June 14, 1918, is quoted for your information and guidance:

Your attention is invited to General Orders, No. 31, War Department, April 24, 1913, and you will instruct your officers relative thereto. The Congress of the United States, by appropriate legislative enactments, has made the matter of assignments, transfers, and details in the Army the subject of formal statutory regulation; executive regulations in furtherance of these statutes have been adopted, the operation of which has been to place upon record in the War Department full and detailed information in respect to the character, capacity, military services, and general attainments of all officers composing the military establishment. The records so obtained fully set forth the relative merits of officers of all grades of rank in the service, and enable all vacancies which occur in the military service to be filled after a careful comparison of the records of those officers who are eligible under the law for particular assignments or details. The practice heretofore announced will be followed in the future; that is, appointments, details, transfers, and assignments will be governed by the official records of the War Department, to the exclusion of other sources of influence or information. Should it be discovered that an officer of the Army has sought recommendation or support from sources outside of those named above, this fact will debar him from obtaining the particular advancement, assignment, or detail which he has by such means attempted to secure, and the fact that he sought such influence will be noted upon his official record.

(*Office Memo. No. 41, Surgeon General's Office, June 20, 1918.*)

Pay of Medical Officers Ordered to Foreign Service.

1. The following extract of cablegram is quoted for your information and guidance:

Approximately 200 medical officers of May Medical Replacement Draft Camp Greenleaf submitted vouchers for May pay at Camp Greenleaf. Checks were to be forwarded to them at port of embarkation and did not arrive. Request that they be forwarded with least practicable delay. Recommend that in the future all medical officers leaving States be advised to have at least one month's pay in their possession upon sailing. Number of officers have arrived practically without funds and it has been necessary to hold them until the next pay came due before sending them from the casual depot.

PERSHING.

(*Cir. Letter from the Surgeon General, July 1, 1918.*)

Specific Reason to Accompany Requests for Orders Relieving Officers From Camps, Etc.

All requests to the Personal Division for orders relieving officers from camps, divisions, ports of embarkation, etc., must be accompanied by a statement from the commanding general or commanding officer that the officers are available, or a specific reason should be given for requesting transfer without this authority.

(*Memo., Surgeon General's Office, July 9, 1918.*)

Need for Reduction of Staffs of Hospitals.

1. Attention is invited to the fact that the need of medical officers is increasing to that extent where it will be necessary to reduce the staffs of hospitals to the lowest point compatible with efficiency.

2. The organization of your staff must be made with this fact in mind.

(*Cir. Letter, Surgeon General's Office, July 16, 1918.*)

Instructions Reference Inducing Members of Staffs of Medical Schools and Hospitals Accepting Service in the Medical Reserve Corps.

1. The Surgeon General has repeatedly stated to the boards of trustees and superintendents of hospitals and to the deans of medical schools that this office would make no attempt to induce the members of their staffs to accept service in the Medical Reserve Corps.

2. The Surgeon General therefore desires that no questionnaires be sent out until a card index has been arranged in this office of the teachers and hospital surgeons, showing those who are considered essential for the continued operation of the institution to which they are connected.

3. Every effort will be made to have this card index available for use within two weeks.

(*Memo., Surgeon General's Office, July 18, 1918.*)

Information concerning Development Battalions.

The following information is desired at the earliest possible date:

(*a*) How many development battalions (G. O. 45, 1918) have been formed at your camp? Strength of each?

(*b*) Name, rank, and specialty, if any, of medical officers on duty with each.

(*c*) Is additional medical personnel needed with the battalion? If so, state specific needs of each.

(*d*) Are physical trainers needed? How many with each battalion?

(*e*) Other immediate needs of Medical Department of battalion, if any.

(*Cir. Letter, Surgeon General's Office, August 8, 1918.*)

Hospital Staff.

1. The information indicated as follows is desired at once.

(*a*) Number of medical officers now on duty:

(*b*) How many of above number are now assigned to overseas units?

2. Reply by wire, attention Hospital Division.

(*Cir. Letter, Surgeon General's Office, August 11, 1918.*)

Personnel and Equipment to Accompany Troops en route.

The following copy of a letter is furnished for your information:

AUGUST 17, 1918.

From: The Surgeon General of the Army.
To: The camp surgeon, Camp MacArthur, Tex.
Subject: Personnel and equipment to accompany troops en route.

1. In reply to your letter of August 2, with reference to Medical Department personnel and equipment which should accompany troops from your station to port of embarkation, you are informed that as a general rule one medical officer, one noncommissioned officer, and one private first class should accompany each trainload of 500 replacement troops.

2. The medical and surgical chest or its near equivalent in expendable supplies should be provided for use en route. Litters are not considered necessary.

3. If nonexpendable property is sent, it should be issued to the accompanying medical officer on memorandum receipt, and should be returned to your camp as baggage of medical personnel or by express. It should not be invoiced to the surgeon, port of embarkation.

4. As medical officers sent with replacement troops from your station are ordered to return to proper station upon completion of their duty with troops, the return of nonexpendable medical property as indicated above should be easily accomplished.

(*Cir. Memo., Surgeon General's Office, August 18, 1918.*)

Physically unfit candidates for Central Officers' Training Schools.

1. The following is a copy of a letter from The Adjutant General of the Army which is submitted for your information and guidance:

> There has been brought to the attention of the War Department the fact that enlisted men of the Army had been placed on the eligible list for admission to central officers' training schools who upon the arrival at the school have been found to be physically unfit. No enlisted man will be sent to the central officers' training schools until a physical examination has determined that he is physically fit for a commission in the Army.
>
> This will be brought to the immediate attention of all concerned.

(*Cir. Letter, Surgeon General's Office, August 31, 1918.*)

Monthly Report.

1. In order that the monthly report of the personnel of the staff at each of the Army hospitals may accomplish the purpose for which it was intended, the following suggestions are offered:

(1) This report should contain valuable information. Its value is in direct proportion to the care given to its preparation. Especially should it contain an accurate statement of the standing, professional and otherwise, of each officer on duty.

(2) In order to standardize these reports, you are directed to observe the following:

(*a*) In column (1) "Name," list the names alphabetically; do not group "Medical, Surgical Administrative," etc.

(*b*) In column (2) "Rank," do not space or use periods. Abbreviate as suggested.

(*c*) Column (3) is self-explanatory.

(*d*) In column (4) "Service indicated by S. G. O.," note as follows: For every officer in your hospital a letter has been sent from this office indicating such officer's availability for assignment to the medical, surgical, laboratory, or administrative service. If no instructions have been received, note merely the term "Unassigned."

(*e*) Column (5) "Remarks," demands particular attention, as it is the most important part of the report. It should be a pen picture of the officer's personal, temperamental, and professional qualifications. If he has been on duty less than a month, or if for any reason his value to the service can not be determined, a statement to that effect should be made. This space should never be left blank nor the simple statement "qualified" made. The chiefs of the different services will submit to the commanding officer the information from which he will formulate this report.

(*f*) If possible, use only one line for each name except in the "Remarks" column, when as many lines as necessary may be used.

(*g*) Make a summary at the bottom of the last page of the report as indicated in the model which is herewith inclosed.

(*h*) On the back of the report sheets is submitted a list of abbreviations which are acceptable to this office, and may be used in making these reports.

ABBREVIATIONS SUGGESTED FOR USE IN REPORTS.

Adjutant	Adj.
Administrative	Adm.
Assistant	Ast.
Captain	Cp.
Chief	Ch.
Commanding officer	CO.
Dentist	Dent.
Detachment	Dt.
Executive	Exe.
Excellent, or exceedingly	Ex.
Exceptionally well qualified	EWQ.
Eye, ear, nose and throat	EENT.
Fair, or fairly	F.
Genito-urinary	GU.
Head surgery	HS.
Laboratory	Lb.
Lieutenant	Lt.
Major	Mj.
Medicine	Md.
Mess officer	MO.
Mental and nervous	M&N.
Orthopedic	Orth.
Plastic and oral	P&O.
Property officer	PO.
Qualified	Q.
Receiving officer	RcO.
Registrar	Reg.
Surgery	Sg.
Surgical assistant	SgAst.
Sanitary	San.
Inspector	Insp.
Unassigned	Unasn.
Well qualified	WQ.
Very well qualified	VWQ.
LtMC. CpMC. MjMC.	No space.

MONTHLY REPORT OF PERSONNEL, U. S. ARMY HOSPITAL ....

...., 1918.

Name.	Rank.	Present duty.	Service indicated by S. G. O.	Qualifications.		Remarks.
				Professional (Yes or no).	Adm., CO., Adj., DtCO., Ch., MO., PO., Reg.	
Doe, John P	Cp	Sg	Unasnd.	Yes	DtCO	Middle name "Work;" not briliant, but particular. Does everything well he undertakes. Good adm. and leader; make good ChSgS.
Ennis, Poy T	Mj	Adm.	Adm.	No	None	Older than years. Blood pressure 220. Technique poor. Undecided, vacillating temperament. No adm. ability. Not suited for BH.
Gratz, Karl P	Lt	Sg	Sg	Yes	None	Hard worker, willing. alert. Ex. technician. Ex. training. Unwilling to admit fallibility; fault, largely racial. Age, 30. Not a leader, which will prevent him from becoming Ch. Good Ast.
Hoss, Charlie	Lt	Md	Md	Yes	MO	Capable, but statements can not be relied upon. Inclined to take short cuts. Seeks pleasure and avoids work.

Number of officers available for medical service per letter S. G. O	1
Number of officers available for surgical service per letter S. G. O	1
Number of officers available for dental service per letter S. G. O	0
Number of officers available for administrative service per letter S. G. O	1
Number of officers available for laboratory service per letter S. G. O	0
Number of officers unassigned	1
Total number of officers reported	4
Number of enlisted men on duty	412
Number of female nurses on duty	96

(*Letter to commanding officer, Surgeon General's Office, October 1, 1918.*)

Quarterly Rating Sheets.

1. It is requested that in the filling out of quarterly rating sheets the following directions be complied with.

(1) Full names of officers to be given.

(2) The corps in which the officer is commissioned, viz, Medical, Dental, Veterinary, or Sanitary.

(3) Name and location of the camp, hospital, cantonment, etc., to be stated on the rating sheet.

(4) Signatures of rating officers and revising officers must be written legibly and typewriters used as far as possible.

(5) Ratings of revising officers shall be in red ink.

(*Cir. Letter, Surgeon General's Office, October 29, 1918.*)

Reduction of Overhead at War Department—Honorable Discharge of Officers.

The following instructions from The Adjutant General of the Army, under date of November 19, 1918, are published for the information and guidance of all concerned:

1. It is the policy of the War Department to reduce the overhead of all departments by the honorable discharge of officers and of enlisted men coincidental with the cancellation of contracts and the termination of work, made possible by the armistice.

2. It is not desired to keep officers and enlisted men, who can be spared, on military duty longer than the necessities of the case require.

3. In pursuance of this policy, recommendations will be submitted to The Adjutant General's Office from time to time by the chiefs of bureaus for the discharge of such officers and enlisted men as is possible and desirable.

(*Office Memo. No. 125, Surgeon General's Office, November 20, 1918.*)

Demobilization of Officers of the Medical Department.

1. I am directed by the Surgeon General to advise you that the present plans for the demobilization of officers of the Medical Department holding temporary commissions and who hold no Regular Army commissions contemplate the division of such officers of the Medical Department into four classes:

First. Those desiring immediate and complete release by way of honorable discharge.

Second. Those desiring immediate release from active service and reappointment in the Officers' Reserve Corps, inactive.

Third. Those who desire to remain on duty under their present commissions as long as their services are required.

Fourth. Those desiring appointment in the Regular Army and who are considered eligible for such appointment.

2. Under existing law the maximum age limit for appointment in the Medical Corps of the Regular Army is 32 years; Dental Corps, Regular Army, 32 years; and Veterinary Corps, Regular Army, 27 years. There is no provision of law for reserve commissions in the Sanitary Corps.

3. The Surgeon General requests that you advise the Personnel Division of this office immediately in which of the above classes you wish to be placed.

(*Letter, Surgeon General's Office, November 21, 1918.*)

Separation of Officers from Service to be by Discharge.

The Adjutant General of the Army informs this office, under date of November 21, 1918, as follows:

Separation of officers from military service is to be by discharge in accordance with instructions being issued to certain commanders authorized to discharge. Tenders of resignation will not receive consideration, and all officers are directed not to submit or forward such tenders of resignation."

(*Office Memo. No. 128, Surgeon General's Office, November 22, 1918.*)

Commendation of Medical Officers when discharged.

1. The following telegram was sent you under date of November 25, 1918:

As officers of the Medical Department are discharged you are directed to show this telegram and present to each of them who has given honorable service a letter signed by you and in words substantially as follows: "Upon your discharge from the service the Surgeon General has directed me to express to you his personal appreciation and that of the department for your patriotic devotion to duty and the self-sacrificing spirit you have manifested in giving your valuable assistance to the department and to the Army when it was so badly needed and to express the hope that you will continue your connection with the department by joining the Medical Reserve Corps."

2. These instructions are now modified as follows:

The letter as written above should be given to all officers of the Medical Department whose services have been honorable except that in cases where the officers' efficiency would not justify reappointment in the Reserve Corps, the letter should stop with the commendation, omitting all reference to joining the Medical Reserve Corps.

(*Letter to all camp surgeons, commanding officers general hospitals, surgeons ports of embarkation, officers in charge medical supply depots, commanding officer Camp Crane, commandant Camp Greenleaf, commandant, M. O. T. C., Fort Riley, Surgeon General's Office, December 5, 1918.*)

Instructions Regarding Discharge to Be Forwarded Through Personnel Division, Surgeon General's Office.

Instructions from this office regarding the discharge of officers under the provisions of Circular No. 75, War Department, November 20, 1918, will in all cases be sent through the Personnel Division.

(*Memo. for heads of divisions, Surgeon General's Office, Decemcer 5, 1918.*)

Medical Officers Made Available by Discontinuance of Medical Officer's Training Camp, Fort Oglethorpe.

It is expected that the Medical Officers' Training Camp at Camp Greenleaf will be abandoned within a short time. It is therefore necessary that immediate disposition should be made of all medical officers whom you wish to retain.

It is requested that orders be asked for assigning these men or that you intimate to the Personnel Division that they may be discharged.

In the Surgeon General's opinion, officers over 45 years of age and those who have been on active duty in the various camps since shortly after the beginning of the war should be given preference if they want to be released, their places being filled by officers who have come into the service during recent months.

(*Memo. for heads of all divisions, Surgeon General's Office, December 17, 1918.*)

Discharge of Roentgenologists.

1. It is directed that you inform the officer in charge, Section of Roentgenology, Office of the Surgeon General, at once regarding the desire of the roentgenologists now on duty at your hospital in the matter of remaining in the service. A number of posts will be available within a short time to which only officers who desire to stay in the service will be appointed. It is, therefore, requested that each officer state specifically whether he desires—

(*a*) Immediate discharge.
(*b*) To remain in the service.
(*c*) To be discharged within three months.
(*d*) To be discharged at the expiration of six months.

(*Cir. Letter No. 240, Surgeon General's Office, January 20, 1919.*)

Morale Officer.

1. In the interest of uniformity and coordination of effort, it is desired that at all hospitals where educational work is being conducted under the direction of the Division of Physical Reconstruction, the chief educational officer shall be designated as morale officer for the hospital, and be assigned such assistants as he may require.

2. In conformity with S. G. O. 211, December 3, 1918, the name and rank of the officer appointed morale officer shall be wired to the chief, Morale Branch, General Staff, room 132, State War and Navy Building, Washington, D. C.

(*Cir. Letter No. 67, Surgeon General's Office, February 1, 1919.*)

Jurisdiction Over Personnel Pertaining to Supply.

1. It has come to the attention of this office that there has been some misunderstanding with reference to the consolidation into the Quartermaster Corps of the personnel handling supplies under the Purchase, Storage and Traffic Division of the General Staff.

2. This matter has been taken up with the Director of Purchase, Storage and Traffic, who states that "it is not the intention of this office to disturb in any way the supply function at any

base or general hospital. It is held in this office that these officers are on the staff of the commanding officer of the hospital."

3. The following copy of letter, which has been furnished to all zone supply officers is furnished you for your information and guidance:

1. It has come to the attention of this office that zone supply officers are interpreting recent instructions for the consolidation into the Quartermaster Corps of personnel handling supplies under Purchase, Storage and Traffic notice as authority for them to exercise jurisdiction over the personnel of posts and military stations.

2. Your attention is invited to the fact that no instructions issued from this office, or by the Director of Purchase, Storage and Traffic, should be interpreted to extend jurisdiction of the zone supply officer over the personnel of any military station, post, or camp that he did not exercise before the consolidation of the Supply Corps.

3. All supply officers and other personnel assigned to any station which was not originally a camp or cantonment for the training of the National Guard or National Army divisions, or which has not been specifically placed under the control of the zone supply officer, will be considered on the staff of the commanding officer of such military station.

4. Your attention is invited to section 3, A. G. O. 84, 1918, which sets forth clearly the method of exercising jurisdiction.

5. The above instructions particularly obtain to base and general hospitals. The supply officer on duty at such hospital is a staff officer of the commanding officer of the hospital. Military courtesy demands that instructions affecting the supply of any such hospitals, or other military stations, not fully under your jurisdiction should be sent through the commanding officer thereof.

6. Zone supply officers will see to it that these instructions are given to all officers in their offices, particularly the personnel offices.

By authority of the Director of Purchase and Storage.

Norris Stayton,
Colonel, Quartermaster Corps, Assistant Director of Storage.

(*Cir. Letter No. 76, Surgeon General's Office, February 5, 1919.*)

Discharge of Officers from Medical Department.

1. A number of instances have come to attention where commanding officers of general hospitals and other commanding officers not authorized to do so have themselves discharged officers of the Medical Department.

2. Circulars Nos. 73 and 75, War Department, 1918, authorize discharges only through the established machinery provided for that purpose, which, in the cases of all officers of the Medical Department at general hospitals, is the discharge section of the Surgeon General's Office. (See Circular No. 124, W. D., 1918.) The commanding officer at a general hospital has no authority to actually issue a discharge order nor to discharge an officer under such order. The Surgeon General's Office notifies the commanding officer that the officer in question is to be discharged on a specified date. This is done for the information of the officer and to give the commanding officer an opportunity to notify this office in case the officer whose discharge is proposed should come under any of the prohibited classes as laid down in paragraph 5, Circular No. 75, or should be absent from the hospital for any cause. Until the notice of the Surgeon General that the discharge order has actually been issued and given its serial number is received by the commanding officer from the Surgeon General, discharge is not effective, and any notification of discharge by the commanding officer to the officer is not based on proper authority, nor is it a legal notification of discharge.

3. The following forms are to be completed in each case of discharge by the Surgeon General and are to be forwarded under one cover to the Surgeon General when so completed:

Report of Discharge of Officer, Form 150–CPB–GS.

Physical Examination, Form 395–1, A. G. O.

Bureau of War Risk Insurance, Form 333. Original and duplicate both to be signed on line for commanding officer's signature by officer being discharged.

Appendix to File Record Card.

Certification of Payment of Insurance Premiums, Circular 38.

Qualification Card, Form CCP–1101 Medical, with final rating.

(*Cir. Letter No. 82, Surgeon General's Office, February 12, 1919.*)

Monthly Report of Officers in Medical Department.

1. It is directed that on the 15th and last day of each month, until further instructions, the following information be furnished the Surgeon General (attention, Personal Division):

Number of officers in the Medical Department (holding emergency commissions only), by name, corps, and rank, in class 1, class 2, and class 3, as described in paragraph 4, Circular No. 75, November 20, 1918.

2. In this connection attention is invited to paragraph 2, Circular No. 86, February 20, 1919.

3. It is necessary that the above information be furnished promptly to enable the Surgeon General to make required report to the Chief of Staff.

(*Cir. Letter No. 105, Surgeon General's Office, February 25, 1919.*)

Amendment to Dental Letter No. 6.

Paragraph 3 of dental letter No. 6 is hereby amended to read:

> The monthly report will be forwarded through medical channels to the Surgeon General before the 5th day of the next succeeding month.

(*Cir. Letter No. 118, Surgeon General's Office, March 5, 1919.*)

Personal Reports.

1. Attention to all officers in the Medical Department is called to Army Regulations, paragraph 827, and to M. M. D., paragraphs 12 and 13, viz:

> Army Regulations, paragraph 827. An officer of a staff corps or department, or an officer serving therein by detail, will make report to the head of the corps or department on the last day of every month, giving his address, a statement of the duties on which he has been employed during the month, the date of his assignment thereto, and the authority by which so assigned. He will report to The Adjutant General of the Army, at the time of change, any change of station during the month, giving dates of departure and joining; also the dates of departure from and arrival at foreign stations and of departure from and arrival in the continental limits of the United States when going to or returning from a foreign station.
>
> M. M. D., paragraph 12. The personal reports made to the Surgeon General in compliance with Army Regulations by officers of the Medical Corps at independent posts and stations will be forwarded direct. In other cases they will be made in duplicate and forwarded to the department surgeon, who will send the original without delay to the Surgeon General and retain the carbon copy for his own records.
>
> M. M. D., paragraph 13. Officers of the Medical Corps will immediately, upon any change of their stations, status, or duties, report the same to the Surgeon General, stating the authority therefor, with the number, date, and source of the order making the change. These reports will be made and forwarded as in the preceding paragraph.

Officers of the Medical Department should be directed to forward these reports promptly.

(*Cir. Letter No. 122, Surgeon General's Office, March 5, 1919.*)

Discharge of Officers from Medical Department.

1. In connection with Circular Letter No. 82, from this office, under date of February 12, 1919, and with reference to the issuance of discharge certificate in case of commissioned officers of the Medical Department at general hospitals and other independent stations from which discharges are made by the Surgeon General's Office direct, attention is invited to the fact that the Surgeon General issues the discharge certificate, Form 525–3, A. G. O., and these certificates should not in any case be issued by the commanding officer of an institution or station unless discharge order is issued by such commanding officer. This in order to obviate the possibility of any duplication of issuance of discharge certificates.

(*Cir. Letter No. 125, Surgeon General's Office, March 6, 1919.*)

Station Files, S. G. O., data for.

1. Owing to the continued changes in the commissioned personnel of the Medical Department since the signing of the armistice through the numerous separations from the military service, it has become necessary that the station file of this office be checked against an accurate list of all officers of the Medical Department in the service on a specified date.

2. You will, therefore, forward to this office attention Commissioned Personnel Division, without delay, a list of all officers of the Medical Department who are on duty at your station on April 4, 1919, indicating whether on permanent or temporary duty, and if temporary, the officer's permanent station should be given. Further, after each officer's name should be written a key word to denote the professional division to which the officer is assigned, or if serving with troops, the name of the organization. For example, "surgical," "medical," "X-ray," "——th Inf.," "——rd Fld. Art.," etc.

3. It is also desired that the attention of all officers of the Medical Department be called to the importance of making personal reports to this office monthly as well as upon departure from and arrival at station.

(*Cir. Letter No. 147, Surgeon General's Office, March 24, 1919.*)

Reappointment in The Medical Reserve Corps.

1. There are forwarded herewith —— copies of a circular of information concerning the Medical Reserve Corps which the department wishes you to distribute to all officers of the Medical Corps prior to their discharge from the service.

2. Additional copies will be sent you on requisition, addressed to the Surgeon General, attention room H-110.

By direction of the Surgeon General.

(*Cir. Letter No. 154, Surgeon General's Office, March 24, 1919.*)

Educational Staff.

1. All commissioned officers, noncommissioned officers, enlisted men, and civilian employees detailed to United States Army hospitals for the educational service for the rehabilitation of disabled soldiers should, if practicable, be used exclusively in such service, except in cases of emergency or when definitely released by the chief educational officer.

2. Such release by the chief educational officer will be regarded as temporary. If the men are not needed in the educational service, a report to this office will be submitted, attention Division of Physical Reconstruction, giving the names of persons so released, with the reasons therefor. If their services are needed in the hospital detachment, indorsement to this effect by the commanding officer should so state.

3. All requests and recommendations for discharge of officers and enlisted men in the educational service will be submitted to this office, Division of Physical Reconstruction, for approval.

(*Cir. Letter No. 168, Surgeon General's Office, April 3, 1919.*)

Report of discharged Medical Officers.

1. Immediately upon discharge from the service of officers of the Medical Department, a report will be rendered by the senior medical officer on duty at the station to the Surgeon General, attention Commissioned Personnel Division giving the following data, viz:

Name
Rank
Age
Date of entry upon active duty, present emergency
Date of discharge
Final rating:

Physical.	Intelligence.	Leadership.	Personal qualities.	General value.	Total.

Duty best fitted for
Home territory
  Base hospital
  Camp organization
  Garrisoned post
  Other unit
Theater of operations
  Regiment or other unit
  Sanitary train
Administrative
Professional
Physically fit for field service
Remarks

This information is necessary in determining the qualification of officers to be commissioned in the new Reserve Corps.

(*Cir. Letter No. 167, Surgeon General's Office, April 4, 1919.*)

Commissioned Personnel.

1. Owing to the urgent demand for specially qualified medical officers, it is the desire of the Surgeon General that all medical officers returning from overseas on the staff of base and evacuation hospitals and of divisions who have had special training in general surgery, orthopedics, ophthalmology, otolaryngology, internal medicine, or neuropsychiatry be informed that their retention in service is desired.

2. Officers who are willing to remain in the service during the continuance of the emergency will be reported by telegram to the Office of the Surgeon General (attention Personnel Division) and not discharged except by authority of this office. Officers who have been returned from overseas for the purpose of discharge on account of urgent personal or other reasons will not be reported.

(*Cir. Letter No. 180, Surgeon General's Office, April 28, 1919.*)

Flight Surgeons for the Air Service.

1. Owing to the discharge of a large number of temporary medical officers, the Air Service needs a number of medical officers of the permanent establishment for the position of flight surgeon.

2. This position is one of recent development. The medical officers who have served as flight surgeons have been particularly active and efficient, so much so that the importance of their work has been recognized by the Air Service authorities, including the commanding officers of the flying fields. The Air Service now requires that a flight surgeon be detailed for duty at all of its active fields.

3. The duties of a flight surgeon are essentially as follows:

He has full charge of everything connected with the physical condition and care of the flier. The flight surgeon lives with and associates with the aviators constantly. In this way he is able to determine when any individual is not in proper condition to fly. In order to do this, he must be able, through tact and general efficiency, to gain the confidence of the fliers. For the same reason it has been demonstrated that the flight surgeon should take flying training and actually become a licensed pilot. Authority has been granted medical officers to take such training, and when they qualify they are entitled to all the rights and privileges of aviators, including the "wings," also a 25 per cent increase in pay from the time training is started. Medical officers who have been flight surgeons are enthusiastic over this work. They have undoubtedly saved many lives and much property.

4. Medical officers below the grade of lieutenant colonel who desire duty as outlined above should communicate with the chief surgeon, Air Service, Washington, D. C. Vacancies will be filled from among those who volunteer in this way for this duty.

(*Cir. Letter No. 189, Surgeon General's Office, April 25, 1919.*)

Officers' Service Department, War Camp Community Service.

1. The following is a letter received from the manager of the officers' service department of the New York branch of the War Camp Community Service:

April 19, 1919.

Surgeon General,
Seventh and B Streets, *Washington, D. C.*

Dear Sir: We are inclosing a circular showing War Camp Community Service for officers in New York City.

This service is without charge and has been of practical benefit to the officer when brought to his notice. Will you kindly give the matter publicity in the interest of the officer who may visit New York City? Any suggestion as to the extension of the service will be appreciated.

Very truly yours,

(Signed) R. L. Martin,
Manager, Officers' Service Department.

2. This matter is deemed of enough importance that it is the desire of this office that it be brought to the attention of all officers under your command.

(*Cir. Letter No. 196, Surgeon General's Office, May 1, 1919.*)

Saturday Telegraphic Personnel Report.

1. In order to make the Saturday telegraphic report of personnel more comprehensive and uniform, the following changes will become effective on and after Saturday, May 10, 1919:

2. The report will cover medical officers only. Sanitary Corps, Dental, Quartermaster officers will not be included in this report.

3. Administrative officers, Medical Corps, will be reported as usual.

4. Under "surgical" will be reported the total number of medical officers functioning in general surgery, orthopedic surgery, head surgery, eye, ear, nose and throat, genito-urinary diseases, and X-ray, not itemized.

5. Under "medical" will be reported all medical officers functioning in internal medicine and tuberculosis, not itemized.

6. Under "neuropsychiatry" will be reported all medical officers specializing in that subject.

7. Under "laboratory" will be included all medical officers of the laboratory service in your hospital.

8. Under "all others" will be included all other medical officers not included in the above five classes, and will include medical officers in the educational and physiotherapy service, not itemized.

9. The name and number of the hospital making the report will be included in the body of the telegram, a sample of which follows:

SURGEON GENERAL, U. S. Army (attention Hospital Division).

Medical officers on duty General Hospital Number Five, week ending May tenth: Administrative, five; surgical, fifteen; medical, twenty; neuropsychiatry, four; laboratory, two; all others, two; total, forty-eight.

SMITH, *Commanding*.

(*Cir. Letter No. 201, Surgeon General's Office, May 6, 1919.*)

Semimonthly Report of Classification of Officers (Medical Department).

1. Referring to Circular Letter No. 105, Surgeon General's Office, dated February 25, directing that reports be furnished this office on the 15th and last day of each month, showing the classification of Medical Department officers holding emergency commissions (per par. 4, Cir. No. 75, November 20, 1918), you are informed that after the initial report has been rendered all subsequent reports should include only officers who have reported for duty since the rendition of the previous report, together with any changes in classification which have occurred since last report.

(*Cir. Letter No. 213, Surgeon General's Office, May 17, 1919.*)

Medical Department Personnel at Camps and Cantonments.

1. The inclosed table of allowances of Medical Department personnel for duty at the various camps and cantonments is furnished for your information and guidance. This table is tentative, and a modification thereof may be necessary, but until such time as a permanent table has been prepared this table will govern. It includes all Medical Department personnel except the camp surgeon, and such personnel as may be engaged on demobilization work.

2. When the hospital at your camp has been made a camp hospital, it is desired that the personnel and the bed capacity of the hospital be reduced in accordance with this table, and that at the expiration of a reasonable time you submit a report to this office, attention Hospital Division, as to whether or not the personnel listed is adequate, together with recommendation for such modification as your experience has shown to be necessary or advisable.

3. Recommendation for the disposition of commissioned, enlisted, and Army Nurse Corps personnel rendered surplus by this reduction will be submitted as early as practicable.

Proposed table of allowances of personnel for duty at camps and cantonments.

Command.	Beds.	Medical officers.	Nurses.	Master hospital sergeants.	Hospital sergeants.	Sergeants, first class.	Sergeants.	Corporals.	Cooks.	Privates, first class, and privates.	Enlisted total.
3,000	100	10	7	....	1	4	7	3	4	58	77
5,000	150	11	10	....	1	7	11	5	6	94	124
7,000	200	12	14	1	....	9	13	6	7	114	150
8,000	250	14	17	1	....	9	14	6	8	126	164
10,000	300	17	20	1	1	10	14	7	9	139	181
12,000	350	18	23	1	1	10	15	7	10	153	197
14,000	400	20	28	1	1	11	15	8	11	166	213
15,000	450	21	30	1	1	11	16	8	12	178	227
16,000	500	22	33	1	1	12	17	9	14	194	248

(*Cir. Letter No. 245, Surgeon General's Office, June 24, 1919.*)

Efficiency Reports.

1. Paragraphs 120–128, M. M. D., 1916, provide that a report will be furnished by the officer in charge of the efficiency of all persons who are serving, on June 30 and December 31 of each year as civilian employees of the Medical Department at Large.

2. Blank forms are inclosed for compliance with the requirements of the paragraphs herein mentioned. It is requested that the inclosed blanks be properly executed and returned to this office not later than July 10, 1919.

(*Cir. Letter No. 246, Surgeon General's Office, June 26, 1919.*)

Recommendations for the Promotion of Officers of the Medical Department.

1. Attention is invited to the fact that a considerable number of recommendations for the promotion of officers of the Medical Department are received at this office, in making which the recommending officer has either wholly or partially disregarded the instructions contained in Circular 248, War Department, May 12, 1919.

2. It is directed that in the future no recommendation for the promotion of any officer of the Medical Department be forwarded to this office in whose case the conditions of Circular 248 do not apply. It is also desired that the particular section or sections of the circular under which the recommendation is made, and the actual duties upon which the officer in question is engaged, be stated.

(*Cir. Letter No. 248, Surgeon General's Office, June 30, 1919.*)

Report of Officers.

1. Inclosed herewith is sample of blank form for preparing a weekly report of the officers on duty at your hospital. This report will be completed and placed in the mail before 4 o'clock p. m. on Friday of each week and should include all officers on duty at your hospital.

2. Further supplies of these blanks will not be furnished by this office but will be prepared at your hospital on typewriter or mimeograph.

(*Cir. Letter No. 269, Surgeon General's Office, July 26, 1919.*)

REPORT OF OFFICERS ON DUTY AT GENERAL HOSPITAL NO. ...., ...

[For the week ending...................., 1919.]

	Medical Corps.							Sanitary Corps.				Dental Corps, total.	Veterinary Corps, total.	Civilian employees.	Remarks. (Include in this space officers of different arms or corps on duty by organization and rank, viz: 2 first lieutenants, Infantry; 1 second lieutenant, Q. M. C., etc.)
	Administration.	Surgery.	Medicine.	Neuropsychiatry.	Laboratory.	All others.	Total.	Administration.	Educational.	Medical supplies.	Total.				
On duty..........	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Sick............	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Total.......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	

....,
Medical Corps, U. S. A., Commanding.

List of All Officers on Duty.

1. In order to determine the availability of officers for continuance in the service after October 31, it is desired that you furnish this office the names and rank of all medical and dental officers on duty at your station. The lists should be arranged so as to group the officers as follows:

Group 1.	Regulars.
Group 2.	Temporary officers desiring commissions in Regular Army.
Group 3.	Temporary officers not desiring commissions in Regular Army but willing to remain as long as their services are requested, but not later than June 30, 1920.
Group 4.	Those desiring separation from the service.

2. These lists should be furnished with the least practicable delay in order that proper information may be immediately available as to the names of officers who will be continued in the service as provided by the extra officers' bill.

(*Cir. Letter No. 299, Surgeon General's Office, September 12, 1919.*)

Emergency Medical Men with Recruiting Parties.

1. The following letter, dated September 13, 1919, from The Adjutant General of the Army is quoted for the information and guidance of all concerned:

> 1. There are emergency Medical Corps men serving with Ordnance Recruiting Party No. 3 from Raritan Arsenal. It is desired that these men and any other emergency medical men engaged on similar duty be relieved by Regular Army men as soon as practicable, and that they either be discharged or used to replace emergency men eligible for discharge under Circular 77, W. D., 1919.
>
> By order of the Secretary of War.
>
> (Signed) JAMES HUNTER,
> *Adjutant General.*

(*Cir. Letter No. 303, Surgeon General's Office, September 18, 1919.*)

Semimonthly Report of Classification of Officers (Medical Department).

1. Circular Letters Nos. 105, S. G. O., dated February 25, 1919, and 213 S. G. O., dated May 17, 1919, are rescinded.

(*Cir. Letter No. 321, Surgeon General's Office, October 9, 1919.*)

Reporting Officers on Duty.

1. A report will be forwarded promptly on October 28, giving the name and rank of all officers of the Medical Department on duty at your station.

2. The officers will be divided into five groups, viz.: Medical Corps, Dental Corps, Veterinary Corps, Sanitary Corps, all other branches of service on duty with the Medical Department.

3. Each group will be classified as regular or temporary.

4. Only officers authorized for retention after October 31, 1919, will be reported.

5. It is essential that this report be accurately prepared and promptly forwarded on October 28.

(*Cir. Letter No. 331, Surgeon General's Office, October 21, 1919.*)

Personal Reports.

1. The attention of all officers of the Medical Department is called to the importance of promptly rendering to this office personal reports in accordance with paragraph 827, A. R., as amended by C. A. R. No. 85, February 20, 1919.

2. The paragraph is quoted as follows:

> An officer of a staff corps or department, or an officer serving therein by detail, or an officer assigned to duty therewith, although not detailed for service therein, will report to the head of the corps or department on the prescribed form, or by letter if the prescribed form is not available, as hereinafter prescribed:
>
> (*a*) *On the last day of every month,* giving (1) his address, (2) brief statement of the duties on which he has been employed during the month, (3) date of his assignment thereto, and (4) authority by which so assigned.
>
> (*b*) At the time of change, (1) any material change of duties with authority therefor, and (2) any change of address.
>
> (*c*) At the time of change of station, stating (1) date of departure from former station, (2) date of arrival at new station, (3) authority for change, and (4) address.
>
> (*d*) When going to or returning from a foreign station, (1) date of departure from or arrival in the continental limits of the United States, (2) date of departure from or arrival at foreign station, (3) authority for the change of station, and (4) address in case of arrival in the continental limits of the United States.

And all officers of the Medical Department are directed to comply with the provisions thereof.

3. Department, camp, and division surgeons, commanding officers of general hospitals, and surgeons of posts, etc., will see that all officers under their jurisdiction promptly submit their personal reports as required.

(*Cir. Letter No. 337, Surgeon General's Office, October 28, 1919.*)

Intensive Instruction of Officers and Noncommissioned Officers.

1. Reports received in this office indicate that many commissioned officers of the Medical, Dental, and Veterinary Corps, and noncommissioned officers of the Medical Department, are not familiar with the details of military administration.

2. In order that this condition may be corrected, a class of instruction will be started at once for medical, dental, and veterinary officers and one for noncommissioned officers, Medical Department, whenever practicable.

3. The surgeon, or other qualified medical officer, will instruct the officers' class, and a qualified officer of the Sanitary Corps or the Medical Corps, the class for noncommissioned officers.

4. The instruction shall consist of lessons and quizzes on Articles of War, Army Regulations, Manual for the Medical Department, Special Regulations 28, general orders, bulletins, and circulars.

A qualifying examination will be given an officer or noncommissioned officer at any time he considers himself fully instructed on any subject of the course. A final examination will be given on completion of the course to those who have not previously qualified. Instruction will be continued for any officer or noncommissioned officer who fails in qualifying on final examination. The examination will be given by the regular instructor and the marks of each member of the class will be filed in the records of the Medical Department organization in which the examination is given. The examination will be searching. Not less than 10 questions will be given on any subject. The course will comprise the following A. W., paragraphs A. R., and M. M. D., and the whole of S. R. 28, including four changes:

NOTE.—Dental and veterinary officers to be given only such part as pertains to their respective corps and to their status as officers.

(*a*) Revised Statutes 1324 and the Articles of War, laying particular stress on the following articles: 4, 29, 45, 54, 58, 61, 63, 64, 65, 66, 67, 68, 85, 93, 95, 96, 110, 112, 113, 119, 120, 121.

(*b*) Army Regulations, pars. 1, 2, 3, 4, 5, 13 (C. A. R. No. 58) 19, 57, 83 (C. A. R. No. 77), 83½ (added by C. A. R. 77), 84 (C. A. R. 77), 85, 87 (C. A. R. 61, 77, 83, and 86), 116, 117 (C. A. R. 58 and 65), 139, 140, 150, 160 (C. A. R. 64), 161 (C. A. R. 64), 266, 270, 272, 278, 283, 286, 296, 297, 327 (C. A. R. 60), 328, 464 (C. A. R. 64 and 74), 465 (C. A. R. 64), 466 (C. A. R. No. 64), 467 (C. A. R., No. 64), 468 (C. A. R., No. 64), 469 (C. A. R. No. 64), 470 (C. A. R., No 64), 657, 661 (C. A. R. No. 56 and 71, 663, 710, 775, 824 (C. A. R. Nos. 70 and 84), 846 (C. A. R. No. 76), 849 (C. A. R. No. 76), 850 (C. A. R. No. 76), 864, 865, 866, 867, 868, 869, 870, 871, 1202, 1205 (C. A. R. 67, 72, and 95), 1208 (C. A. R. 89), 1210, 1212 (C. A. R. 58, 66, and 82), 1220 (C. A. R. 83, 84, and 86), 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405 (C. A. R. 72), 1406, 1407, (C. A. R. 72) 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415 (C. A. R. 57), 1416, 1417, 1418, 1419, 1420, 1420½, 1421, 1421½ (C. A. R. 58 and 88), 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431½, 1432, 1433 (C. A. R. 74), 1434½, 1435½, 1436, 1437, 1438, 1439, 1440, 1441, 1442 (C. A. R. 70), 1443 (C. A. R. 69 and 74), 1444 (C. A. R. 69), 1444½ (C. A. R. 70), 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1459½ (C. A. R. 70), 1460 (C. A, R. 69), 1461 (C. A. R. 70), 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470 (C. A. R. 85 and 94). 1471, 1472, 1473, 1474, 1475, 1476, 1476½ (C. A. R. No. 92), 1477, 1479, 1482, 1483, 1484, 1485, 1489 (C. A. R. 57), 1490 (C. A. R. 85), 1491 (C. A. R. 85), 1492; M. M. D., par. 37 (Bull. 16, 1916), 40, 42, 182, 183, 198, 199, 200, 201, 203, 206, 209, 214, 218, 219, 221, 222 (C. M. M. D. No. 11), 229, 230, 234, 235, 240, 241, 242, 242½, 243, 244, 248, 253, 257, 258, 279, 280, 281, 345, 347, 348, 349, 350, 361, 362, 363, 401, 427, 456.

5. Reports will be made promptly to the Surgeon General, through medical channels, showing the date on which classes of instruction were started in compliance with this letter, and thereafter a monthly report of progress will be made, showing number of hours instruction during the month and percentage of attendance.

6. The classes of instruction herein directed must be so organized and timed as to cause no interference with medical attendance or other duty required by the local commanding officer.

(*Cir. Letter No. 357, Surgeon General's Office, November 26, 1919.*)

CONTRACT SURGEONS.

Letters from Contract Surgeons Reference Expiration of Contracts.

A large number of letters and telegrams are being received from contract surgeons in regard to expiration of contracts.

These contracts are in force for an indefinite period and until annulled by the surgeon. They do not expire at the end of one month as the wording seems to have been interpreted.

(*Memo. for all surgeons, S. A. T. C. units, Surgeon General's Office, October 25, 1918.*)

ARMY NURSE CORPS.

Authority of Head Nurses.

1. Attention is invited to the accompanying advance copy of changes in the Manual for the Medical Department relating to the status of nurses in the military hospitals.

2. Attention is specifically invited to the fact that by these changes the head nurse of a ward is in charge of that ward, next in authority to the ward surgeon.

3. There has been much confusion about the relative authority of the head nurse and the ward master. Under the old regulations the ward master has been considered in charge of the discipline, order, and cleanliness of the ward, the head nurse's authority being limited strictly to those matters dealing with the professional care of the patient. It should be noted that under this change there is no dual control by the head nurse and the ward master. The head nurse is in charge.

4. It is considered desirable from every point of view to put these changes into effect immediately.

(*Cir. Letter, Surgeon General's Office, April 15, 1918.*)

Army School of Nursing.

1. It has become apparent that the supply of graduate nurses available for military service will not be sufficient to meet the needs of the Army, both at home and abroad.

2. In order to supplement the supply of graduate nurses, releasing the maximum number for overseas duty, an Army School of Nursing has been established, with headquarters in the office of the Surgeon General in Washington. Branch training school units will be established in military hospitals throughout the United States, principally in the large camp hospitals which have active services.

3. From now on, graduate nurses will be rapidly withdrawn from these hospitals and their places must be taken by student nurses. Details in relation to the establishment of the training school unit at your hospital will be taken up directly with your chief nurse, by Miss Goodrich, dean of the Army School of Nursing. Whenever the chief nurse has had sufficient experience in the training school work, she will also act as director of the training school unit. When the chief nurse is not sufficiently experienced, a woman who is qualified in training school organization and administration will be supplied. The students are usually supplied in units numbering from thirty to fifty. A large number of carefully selected young women are already enrolled.

4. It is imperative that arrangements be made at once for the accommodation of the first group of students at your hospital, in order that the nursing service may be safeguarded, in view of the constant withdrawal of graduates which will take place from now on. You are directed to give attention at once to the matter of arranging for the reception and accommodation of the first student group and to advise this office how soon you will be ready for them.

(*Cir. Letter, Surgeon General's Office, August 9, 1918.*)

Instructions to Nurses Traveling under Orders.

Nurses traveling under orders are not allowed to stop over at any place en route, except when permission for a delay is obtained before starting on a journey and the authority therefor is incorporated in the travel order. Any such authorized delay for the convenience of the nurse is regarded as leave of absence. In preparing expense accounts it must be borne in mind that the Government will not pay traveling expenses of a nurse on a status of leave. In case of an unavoidable delay, make a memorandum of the cause, length of time, and place where the delay occurred. When it is necessary to stay overnight at a hotel, obtain a receipt for the night's lodging.

Nurses will be reimbursed for actual expenses not to exceed $4.50 per day. These expenses include lodging at hotel incurred as above, meals either at a hotel or on a train, and tips to waiters. Charge for lodging will be included in the expenses of the day on which the lodging was procured. Transfer of baggage not to exceed 50 cents for each transfer and fees to porters as below will be allowed in addition to the $4.50. The bills should give an itemized account of each day's expenses, specifying where meals were taken, whether at a hotel or on a train, for example:

January 1, 1917:	Breakfast on train.	$............	Tip to waiter..................	$............
	Luncheon on train.	....	Tip to waiter..................	....
	Dinner on train...	....	Tip to waiter..................	....
	Fee to porter.....	....		....
	Total...........	....		....
January 2, 1917:	Breakfast on train.	$............	Tip to waiter..................	....
	Luncheon on train.	....	Tip to waiter..................	....
	Dinner on train...	....	Tip to waiter..................	....
	Total...........	....		....

Fees to expressmen and porter on arrival at or departure from hotels and stations not to exceed 10 cents in each case, when the service is rendered in connection with the transportation of baggage; fees for checking baggage at stations and hotels not to exceed 10 cents for each piece checked; and fees to sleeping-car and parlor-car porters not to exceed 25 cents per day, or 10 cents when the car is used in the daytime only.

Nurses must keep their orders always with them as they must be presented immediately on their arrival at the hospital.

Nurses should not give baggage checks to transfer agents, but to the chief nurse after arrival at the hospital. The Government attends to the delivery of trunks, etc.

(*Memo. for nurses traveling under orders with instructions concerning incidental traveling expenses, Surgeon General's Office. Undated.*)

Physical Examination and Discharge, Nurses, Army Nurse Corps.

1. The Surgeon General directs that the physical examinations of members of the Army Nurse Corps be made as soon as practicable after they arrive at your hospital for duty and that the reports be forwarded to this office. Any unfavorable report should be supported by full reasons therefor. In all doubtful cases, the report should be accompanied by a recommendation of the commanding officer as to the physical fitness of the nurse for retention in the service or discharge therefrom. All reports of illness or disability should be accompanied by a statement as to whether incurred in line of duty or not.

2. Further, that each nurse ordered home for discharge be instructed as follows:

(*a*) To send letter to the Surgeon General stating date and hour of departure from hospital and date and hour of arrival at home, with complete home address, accompanied by letter of appointment or assignment and two copies of the official travel order.

(*b*) To submit voucher to this office for reimbursement of incidental traveling expenses incurred while en route, if any, and if correct, sign and have the same properly executed before a notary public. If desired, the voucher may be executed before any postmaster, free of charge. This voucher must be properly prepared in accordance with paragraph 733, subparagraph (1), Army Regulations. No delay for own convenience will be permitted except when authorized in travel order. No traveling expenses are allowed on such days of leave.

3. It is necessary that all of these papers be promptly forwarded to this office for completion of final pay vouchers and transmission of same to disbursing quartermaster. The letter of appointment or assignment eventually will be returned to the nurse. Any failure on the part of the nurse to promptly obey these instructions embarrasses this office and delays the computation of her final leave and settlement of pay account.

4. Full notation should be made on each nurse's letter of appointment or assignment in regard to administration of triple typhoid prophylaxis and smallpox vaccine. In the case of those who have taken out war-risk insurance, date, amount, date of birth, and name of beneficiary should be noted on letter of appointment or assignment. Full information in regard to allotments made by nurses ordered overseas should also be noted.

(*Cir. Letter, Surgeon General's Office, August 26, 1918.*)

Nurses Ordered to Mobilization Station.

1. Referring to orders issued from time to time for members of the Army Nurse Corps to proceed to the mobilization station, Hotel Albert, Eleventh Street and University Place, New York City, to await transportation for duty with the American Expeditionary Forces, it is requested that a telegram be sent to the chief nurse, mobilization station, stating the time of the expected arrival in New York of the nurses ordered there from your hospital and the number in the group. This information is essential in order to insure the necessary hotel accommodations for these nurses at the mobilization station.

(*Cir. Letter, Surgeon General's Office, November 5, 1918.*)

Reduction of Nursing Force.

1. As with the demobilization of the troops it will be necessary to reduce considerably the nursing force, official communications will be sent to you from time to time, requesting that certain number of nurses be recommended for discharge or relief from active service. In making these recommendations, the Surgeon General directs that the following points be considered:

(1) Recommend those nurses who desire release from service to assume former positions, etc., whether Regular or Reserve.

(2) Those who have not demonstrated their suitability in all respects for the Army service, whether they be members of the Regular or Reserve Corps. Reasons for unsuitability should be fully stated on efficiency reports in order to prevent future return to the service.

2. As it is probable that many readjustments will be necessary as result of demobilization of the Army and that the Regular Corps will be increased somewhat in size if a larger standing Army is authorized, it is requested that those nurses who have demonstrated their particular fitness for Army service be advised to request transfer from the Reserve to the Regular Corps. Those requests, however, should not be forwarded to this office for a period of approximately three months.

3. Inclosed herewith are instructions which should be given to nurses ordered to proceed to their homes for relief from active service or discharge from the Army Nurse Corps. All such nurses should be furnished with copies of their letters of assignment or appointment, upon which should be noted date of departure from your hospital, together with date of last payment. On this should also be placed full information in regard to war-risk insurance policies, allotments, etc. Nurses should also be carefully instructed in regard to making out their account for incidental traveling expenses and should be given a voucher for this purpose. (W. D. Form 350 or 350 A.) At least two copies of the official travel order should also be furnished to each nurse ordered home for discharge.

4. In view of the contemplated reduction of the nursing force, the order directing that all nurses purchase the outdoor uniform within three months after their entry into the service is hereby revoked. Nurses who desire to purchase this uniform may do so and its use should be encouraged, but its purchase is optional and not mandatory.

5. The uniform with insignia and Army buttons may be worn by nurses for a period of three months after discharge. After that date, the Army buttons and insignia should be removed, as without the insignia the suit does not present the appearance of a uniform.

INSTRUCTIONS FOR NURSES ORDERED TO PROCEED TO THEIR HOMES FOR RELIEF OR DISCHARGE FROM THE ARMY NURSE CORPS.

Immediately upon arrival at your home, inclose in one envelope, addressed to the Surgeon General, United States Army, Washington, D. C., the following:

1. Letter addressed to the Surgeon General informing him:

(*a*) Hour of arrival at home.

(*b*) Date of arrival (date of heading of letter not sufficient).

(*c*) Give complete address to which you want your final papers and pay forwarded, giving full name.

2. Letter of appointment.

3. Voucher (Form 350A) for traveling expenses, sworn to before a notary public before sending. On face of voucher state:

(*a*) Train time leaving station.

(*b*) Time leaving temporary stops.

(*c*) Time arriving at home station.

(*d*) Explain delays en route, causing stops over two hours.

4. Travel orders (two copies).

5. All other official papers such as war-risk insurance policies, allotments, etc., that you may have in your possession.

NOTE.—Your letter of appointment is needed in the preparation of your final pay account. It will, however, be returned to you as soon as it is no longer needed in this office.

INFORMATION IN RE OUTDOOR UNIFORM, ARMY NURSE CORPS.

Suit.—$34.50. Navy blue serge No. 151. Coat: Lining, Venetian cloth. No cuff on sleeves. Chief nurse to have ½-inch black braid on sleeve, 3 inches from wrist.

Skirt.—At least 2 yards wide, 6 inches from ground; extra skirts, $12.50 each.

Capes.—Navy blue, lined with red, $15.50.

Military overcoat.—$29. Material: Unfinished worsted No. 195, lined with heavy Venetian cloth; interlined to waist with flannel. Chief nurse, ½-inch black braid on sleeves, 3 inches from wrist. Length: Seven inches from ground. (Measurements to be taken in accordance with instructions forwarded, preferably by a tailor or some one familiar with the proper methods.) May be purchased from Weltman, Pollack & Co., 35 West Thirty-third Street, New York, N. Y.

Hats.—Navy blue velour, $4.25 each; sizes 7, 7¼, 7⅜, 7½, 7⅝. Best & Co., Fifth Avenue and Thirty-sixth Street, New York, N. Y. Postage prepaid within 600 miles of New York; from that point postage is charged.

No. 42 navy blue straw, $2.50 each; sizes, 7¼, 7⅜, 7½. William Carroll & Co., 743 Broadway, New York, N. Y. Express, 25 cents.

Waists.—No. 4 white cotton waist, at $2.50 each; No. 41 blue flannel waist, at $5.13 each; No. 40 navy blue silk waist, at $5.80 each; from John Forsythe & Sons, 3 West Forty-second Street, New York, N. Y.

The letters "U. S." in bronze may be purchased from any house which carries military supplies.

The caduceus in bronze with monogram "A. N. C." in gilt may be ordered from Bailey, Banks & Biddle, Philadelphia, Pa., for $1.25 per pair.

It is suggested that nurses who desire to purchase these articles transmit their orders through the chief nurse.

Check to accompany order.

Prices are subject to change without notice.

(*Cir. Memorandum, Surgeon General's Office, December 5, 1918.*)

Student Nurses.

1. In order that adequate experience may be arranged through affiliations with civil training schools in services not obtainable in the military hospitals for students who desire to obtain a diploma, it is requested that the director of the training school unit interview the students at an early date and forward to this office the following information:

(*a*) How many students desire to remain in the school to complete the course and obtain a diploma in nursing.

(*b*) How many students desire to remain only during the need occasioned by the return of the sick and wounded soldiers.

(*c*) How many students desire to sever their connection with the school in the immediate future.

2. Address reply "Attention Dean of the Army School of Nursing."

(*Letter to the commanding officer (attention the director, training school unit), ———, Surgeon General's Office, December 29, 1918.*)

Regulations Governing Student Nurses.

1. Memorandum for student nurse traveling under orders with instructions concerning incidental traveling expenses, Form C–799, is withdrawn as such incidental traveling expenses are not to be entered.

2. Students will receive, according to their appointment, transportation and $4 per day in lieu of traveling expenses when traveling under orders.

3. The oaths of these students are already on file in this office.

4. In reporting the arrival of students to this office, the date on which they left home under orders should be included.

5. Students permanently relieved from duty should be instructed to report to this office by letter, date and hour of departure from hospital and date and hour of arrival at home, together with their bill, sworn to before a notary, on Form 350A, a copy of which should be supplied them. Final payment and reimbursement will be made through this office.

6. The appointments of students permanently relieved from duty should be immediately forwarded to this office with all notations as to leave and pay made thereon.

(*Cir. Letter No. 2, Surgeon General's Office, January 2, 1919.*)

Reports concerning student nurses.

1. The monthly efficiency reports on the student nurses will be filed with their records in the office of the director of the training school unit. Upon completion of the preliminary course, a summary of these reports should be sent, together with the results of the examinations in the subjects taught during that course and a recommendation of the director of the training school unit as to their acceptance or rejection as student nurses in the Army School of Nursing, to the dean of the school.

2. In case of absence from duty on account of illness, reports need not be sent to this office, unless for some special reason it is deemed necessary that a report be sent. A complete record

will, of course, be kept concerning the students in the daily time book and on the monthly record cards provided for these students. These regulations are made in order that unnecessary correspondence may be avoided.

(*Cir. Letter No. 3, Surgeon General's Office, January 2, 1919.*)

Release of Student Nurses, Army School of Nursing.

1. Paragraph 1, letter this office November 29, 1918, S. G. O. 231 (student nurses), is changed to read as follows:

> Resignation of student nurses may be accepted by the commanding officers of their units, effective at once or at future dates set therein. Notation thereof should be made in each case on the student's letter of appointment, and notification forwarded promptly to this office.

2. Conformably to the terms of the appointment, the student is entitled to transportation and $4 a day in lieu of actual traveling expenses when traveling under orders on return home from last station of duty. Travel orders in such cases may, under existing regulations, be issued only as directed by the Surgeon General, and must expressly recite that the student will be allowed a per diem of $4 in lieu of actual traveling expenses.

3. A student who desires her resignation to become effective before travel orders can be secured can not be reimbursed her transportation and traveling expenses, and should be so informed before her resignation is accepted.

(*Cir. Letter No. 43, Surgeon General's Office, January 22, 1919.*)

Pay of Chief Nurse.

1. The following bill relative to pay of chief nurses became a law on February 28, 1919:

[An act to amend section four of Chapter V of an act entitled "An act making appropriations for the support of the Army for the fiscal year ending June 30, 1919," approved July 9, 1918, and to make said act retroactive.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 4 of Chapter V of an act entitled "An act making appropriations for the support of the Army for the fiscal year ending June 30, 1919," approved July 9, 1918, be, and the same hereby is, amended, to be effective as of and from July 9, 1918, by changing the clause "chief nurses, $120, in addition to the pay of a nurse," to "chief nurses, $360, in addition to the pay of a nurse."

(*Cir. Letter No. 128, Surgeon General's Office, March 7, 1919.*)

Student Nurses.

SECTION I. (1) Owing to the rapid decrease in the medical service, only those students who desire to complete the course and obtain a diploma in nursing will be retained in the school.

(2) It is requested that the names of all those students not intending to complete the course be immediately forwarded to this office, when travel orders will be issued for their transportation to their homes by April 1st, or as soon thereafter as possible.

SEC. II. (1) It appears that a number of students are applying for admission to civilian training schools.

(2) If the original papers have not already been returned to Washington, such students may be given copies of the educational credentials and of the physical and dental examinations submitted with their application papers, and copies of the records of their practical experience and the theoretical courses completed in the Army School of Nursing, together with their examination marks.

Under no circumstances should the original credentials submitted on the blanks of the Army School of Nursing of the original records of the theoretical and practical experience be issued either to these students or to the authorities of the school to which they are applying for admission.

(3) Students must clearly understand that their admission to civilian training schools completely severs their connection with the Army School of Nursing. This does not apply to the affiliations with the civilian schools arranged by this office for students desiring to complete their course and obtain the diploma of the Army School of Nursing.

(4) Upon the release of a student nurse, either through resignation or dismissal, the folder containing her original papers, together with all other data relating to her period in the Army school, should be returned by registered mail to the Surgeon General's Office, attention of the Army School of Nursing.

(*Cir. Letter No. 132, Surgeon General's Office, March 10, 1919.*)

Student Nurses, Army School of Nursing.

1. Arrangements are being made by this office with civilian hospitals for courses of instruction for student nurses not available in military hospitals by means of affiliations with hospitals offering the desired experience.

2. Students in order to be eligible for the diploma of the Army School of Nursing must have satisfactorily completed the courses in the affiliating hospitals as well as the courses in the military hospitals.

3. The arrangements with the civilian hospital training schools provide that the students in the Army School of Nursing shall be given board, lodging, and laundry and such (if any) allowance as is given their own students. (Some schools do not provide an allowance). During the period of affiliation, in accordance with the provision in the announcement of the school, the monthly allowance of $15 from the Army will be discontinued.

4. It is requested that a copy of this letter be given to each student signifying her desire to complete the course in nursing and obtain the diploma of the school.

5. In accordance with Circular Letter No. 132, the names of all students not desiring to complete the course are to be immediately forwarded to this office, attention Army School of Nursing.

(*Cir. Letter No. 151, Surgeon General's Office, March 24, 1919.*)

Physical Examination of Army Nurses Preceding Separation from the Service.

1. It has been noted that nurses are frequently separated from the service without a record of physical examination in accordance with instructions set forth in letter from this office dated November 29, 1918, relative to the final physical examination on Form 135–3, which should be made of all nurses immediately preceding their departure from the hospitals for separation from the service. Copy of these instructions are quoted below and it is directed that hereafter they be rigidly observed by all concerned:

> 1. Inasmuch as members of the Army Nurse Corps are beneficiaries of the war-risk insurance act, it is necessary that a thorough physical examination be given every member of the Army Nurse Corps immediately preceding separation from the service.
>
> 2. When competent orders are received directing the discharge or separation from the service for any cause of members of the Army Nurse Corps, the commanding officer of the hospital will cause a careful physical examination to be made similar to that required for officers and soldiers under provisions of Circular 76, W. D. A complete record of the results of such physical examination will be made on Form 135–3, which will be modified, as will be obviously necessary, to make the form applicable for members of the Army Nurse Corps.
>
> 3. The completed Form 135–3 for each Army nurse discharged or otherwise separated from the service will be sent direct to the Surgeon General of the Army. (Memo. W. D., Nov. 29, 1918.)

2. In the case of nurses granted leaves of absence to proceed to their homes on account of serious illness in the family or other emergency, and whose return may be prevented, it is considered advisable that the examination on Form 135–3 be made prior to their departure from the hospital, but not forwarded to this office unless authority is given to discharge or relieve the nurse from the service while home. In forwarding requests of this nature, the location of the nurse should be stated, together with statement that the examination has been made, if such is the case.

(*Cir. Letter No. 164, Surgeon General's Office, March 31, 1919.*)

Army Nurse Corps: Procedure upon a Separation from Service.

1. As it has become necessary to decentralize the work connected with the demobilization of members of the Army Nurse Corps, it is directed that the following plan be adopted in the case of nurses ordered to their home for discharge from the Army Nurse Corps or relief from active service:

First. Upon receipt of proper authority, travel orders will be issued without delay directing them to proceed to their homes for discharge or relief from active service. The travel orders should state, in accordance with instructions given in W. D. Circular No. 185, dated April 14, 1919, that the per diem allowed for traveling expenses, $4 per day, should be paid in advance. Estimate the time required for the journey and pay the nurse in advance the amount to which she is entitled. In arranging travel orders in such cases, it must be borne in mind that the Government will not pay the traveling expenses of a nurse on the status of leave of absence.

Second. Grant all accrued leave with pay due. Leave to begin on the day following the time estimated for the journey home. Should full information concerning the leaves of absence previously granted the nurse be lacking, an affidavit by the nurse giving inclusive dates may be accepted. (See inclosure for method of calculating accrued leave.)

Third. On the day the accrued leave expires, execute the discharge or relief from active service of the nurse in accordance with paragraphs 71 or 102, M. M. D., placing suitable indorsement upon her letter of appointment or assignment.

Fourth. Prior to departure of the nurse from her station, the final pay roll should be signed by her, using W. D. Form 369 for this purpose. Her letter of appointment or assignment should be retained until the check in settlement of her final pay account has been received. This check, together with her letter of appointment or assignment, should then be forwarded to the nurse to the address given by her. Before leaving her station, the nurse should be instructed to report, on the day her final leave expires, to the commanding officer of the hospital or sanitary formation at which she last served the address to which she wants her final check and letter of appointment or assignment mailed.

Fifth. It will be necessary, in the case of all nurses whose services are terminated, to notify the Bureau of War Risk Insurance as to the date of their discharge or relief from service and to inform the nurses that future payments on their war-risk insurance should be forwarded by them direct to that bureau. The Director of Finance, Washington, D. C., should be notified in regards to the termination of all allotments or Liberty bond payments.

Sixth. In the case of posts which may be closed before the final pay account of nurses can be forwarded for settlement, on account of accrued leaves due, the pay roll, together with letter of appointment or assignment and all information in the premises, should be forwarded to the Office of the Surgeon General.

Seventh. As soon as practicable after the above instructions have been followed, the following information should be forwarded to this office, showing fully the action taken:

(*a*) Date of departure of nurse from the station.

(*b*) Date estimated for the journey.

(*c*) Inclusive dates of accrued leave with pay granted.

(*d*) Date upon which the discharge or relief from service became effective.

(*e*) Should an affidavit from a nurse relative to leaves of absence previously granted be necessitated, the original affidavit should be forwarded to this office for file with her record.

(*Cir. Letter No. 188, Surgeon General's Office, April 25, 1919.*)

Accrued Leave.

Consider one year to equal 360 days.
Consider one month to equal 30 days.
Deduct any leave without pay from total days of service.
Multiply days of leave with pay, previously taken, by 12.
Subtract result from days of service.
Divide balance by 11.
Result: Days leave due.

Example: Mary Doe; service began July 10, 1908; served until May 5, 1915. Leaves granted during this period were 30, 17, 10, 45 days; total, 102.

	Yr.	Mo.	Da.	
July 10, 1908, to May 5, 1915....	1915	5	5	
	1908	7	10	
	6	9	25	1 day, the service being inclusive.
			1	
	6	9	26	Total service.

6 years × 360 equals..2,160 days.
9 months × 30 equals...270 days.
26 days.

2,456 days' service.
102 days leave × 12 1,224

1,232 divided by 11 equals 112 days leave due.

May 6 to August 25, 1915, inclusive, leave with pay. Discharge August 25, 1915.

Days' leave multipled by 12 as each day of completed leave represents 11 days of duty and 1 day of leave.

1,232 is divided by 11, as 1,232 represents actual days of service and includes no leave.

Fractions of days leave are not regarded.

(*Cir. for Army Nurse Corps, rules for computing accrued leave with pay.*)

Travel Home, Nurses and Civilian Employees.

1. Under regulations members of the Army Nurse Corps are, subject to specified exceptions, entitled to travel home at public expense on termination of active service. Certain civilian employees of the Medical Department at large are conformably to the stipulations of their contracts or letters of appointment similarly entitled to travel home on termination of service.

2. Under date of the 2d instant The Adjutant General of the Army advises of the decision of the Secretary of War as follows:

> The home of the members of the Army Nurse Corps and civilian employees of the Medical Department, such as reconstruction aides, dietitians, laboratory technicians, etc., is held to be that place where the individual entered the military service, defined to be the point from which Government transportation was furnished to the first duty station of the individual in establishing the point to which they are entitled to return transportation. Transportation will be issued only from the place at which the individual is serving to the place where the individual entered the service or to any other place not a greater distance from the place at which serving. The point to which transportation is furnished will be noted in the travel order and on the letter of appointment, and in the event that transportation is furnished to a place less distant than to place of entry into service, the fact will be noted in the same manner.

3. In recommending the separation from service of a member of the Nurse Corps or a civilian employee who is entitled to travel home at public expense, the place to which transportation is proposed should be designated. If the place designated is other than that from which the nurse or employee entered the service, affirmative statement must appear that the distance to the designated place from the place of last service is no greater than to the place of entry.

By direction of the Surgeon General.

C. R. Darnall,
Colonel, Medical Corps, U. S. A., Executive Officer.

Copy to: Department and camp surgeons; surgeons, ports of embarkation and independent posts; chief surgeon, Air Service; commanding officers, base and general hospitals.

(*Cir. Letter No. 204, Surgeon General's Office, May 7, 1919.*)

Uniform Equipment, Army Nurse Corps.

1. The following copy of letter from the Office of the Director, Purchase, Storage and Traffic Division, Washington, D. C., is furnished for your information and guidance:

> 1. Reference your letter of May 3, requesting information as to the proper method for the Army Nurse Corps to receive articles of uniform, you are advised that the Army nurses should apply to their commanding officer for the issue of uniforms under General Orders, No. 134, War Department, 1918.
>
> 2. If the uniforms are not available for issue by him, his supply officer should submit to the supply officer of the camp, post, or station at which located, who will in turn requisition the proper zone supply officer for the necessary equipment.

(*Cir. Letter No. 209, Surgeon General's Office, May 15, 1919.*)

Pay Accounts of Members of the Army Nurse Corps Ordered Home for Discharge.

1. The following copy of Finance Circular No. 66, dated May 19, 1919, from the Director of Finance, United States Army, is furnished for your information and guidance:

> 1. Under date of May 2, 1919, the Secretary of War approved a request made by the Surgeon General of the Army for the suspension, during the present emergency, of paragraph 79*b*, Manual for the Medical Department, 1916 (published in General Orders, No. 106, War Department, 1910, and paragraph 1732, Manual for the Quartermaster Corps, 1916), which provides that "the pay accounts of nurses ordered home for discharge will be prepared in the Office of the Surgeon General.
>
> 2. In view of this approval, the Surgeon General has issued instructions (Circular Letter No. 188, S. G. O., April 25, 1919) to the effect that the commanding officers of hospitals and sanitary formations will prepare and certify final pay accounts (W. D. Form 369) of members of the Army Nurse Corps ordered home for discharge.
>
> 3. Pay accounts prepared and certified to in accordance with the above instructions when presented to finance officers will be honored and paid in the usual manner.

(*Cir. Letter No. 221, Surgeon General's Office, May 22, 1919.*)

Communications Relating to Nursing Personnel.

1. It is requested that all communications relating to the nursing personnel of the Medical Department, or to the equipment required for, or to any matters pertaining to the nursing service, bear an indorsement by or be initialed by the chief nurse.

2. All communications issued by the Surgeon General's Office relating to the nursing personnal should be automatically referred to the chief nurse.

(*Cir. Letter No. 224, Surgeon General's Office, May 26, 1919.*)

Sick Leave, Army Nurse Corps.

1. It is noted that members of the Army Nurse Corps have in a considerable number of cases been allowed sick leave within a calendar year in excess of the 30 days authorized by law (sec. 5, act July 9, 1918, Bull. 43, W. D., 1918).

2. In every such case action will be immediately instituted to correct such error, as follows:

If the nurse had accrued leave due, orders granting the excess sick leave will be amended to substitute regular leave for the number of days equalling the excess. If the nurse had not sufficient accrued leave to cover any excess sick leave granted her, the orders will be amended to provide that the excess shall be leave without pay, and the necessary deductions will be made on her next pay voucher.

(*Cir. Letter No. 274, Surgeon General's Office, Aug. 1, 1919.*)

Army Nurse Corps.

1. Inasmuch as it has become necessary to reestablish the Army Nurse Corps on a permanent basis, you will please invite all reserve nurses at your station who are qualified for appointment in the regular corps to submit applications for such appointment through your chief nurse. Applications so received will be forwarded with your chief nurse's recommendation and your own in each case for the action of this office. Reserve nurses submitting applications hereunder should have their attention called to paragraph 66, Manual for the Medical Department, and be advised that the period of active service as reserve nurses will not operate to diminish the period to be served in the regular corps; but active service as reserve nurses will count toward longevity pay.

2. Members who were appointed in the regular corps with the understanding that they would be required to serve for the period of the emergency only in conformity therewith should be entitled to discharge upon application. Many of them, however, would prove desirable recruits for the regular establishment, and they should be encouraged to apply for retention through the same channels. In the case of these nurses the time already served will apply on the three-year term referred to in paragraph 66 of the manual, as well as toward longevity pay.

3. Reserve nurses who do not wish appointment in the regular corps, and members of the regular corps who do not wish to continue therein after the expiration of the emergency, should be requested to so state by letter directed through regular channels to the Surgeon General for appropriate action at the proper time. Except in special cases, it is expected that they will be retained in the corps as long as the necessity and authority continue for their services. It is impossible at this time to state how long that will be.

(*Cir. Letter No. 284, Surgeon General's Office, August 16, 1919.*)

Indefinite Leaves of Absence Without Pay to Student Nurses.

1. Student nurses in the Army School of Nursing are to be given indefinite leaves of absence without pay for the purpose of attending affiliating courses at civilian hospitals, these students to be carried on your rolls on a status of leave of absence without pay.

2. The following form is authorized to be used in releasing the student nurses for indefinite leave, and is to be signed in triplicate by the commanding officer of the military hospital from which the students are released, one copy to be sent to the Surgeon General's Office, one copy to be filed with the hospital records, and one copy given to the student nurse:

....
(Name of post.)

...., 19...

Student nurse, ..., is hereby granted an indefinite leave of absence without pay, beginning ...., 19.., for the purpose of attending the course of instruction in .... Hospital, ..., affiliating with the Army School of Nursing.

Upon the completion of the course, further orders will be issued by the Surgeon General.

By order of the Surgeon General:

....

...................., *Medical Corps, U. S. A.*

(*Cir. Letter No. 288, Surgeon General's Office, September 11, 1919.*)

MEDICAL ENLISTED RESERVE CORPS AND STUDENTS' ARMY TRAINING CORPS.

Discharge of Hospital Internes and Medical Students from the Draft.

The following regulations governing the discharge of hospital internes and medical students from draft under the selective-draft law of May 18, 1917, have been made by the President:

> First. Hospital internes who are graduates of well-recognized medical schools or medical students in their fourth, third, or second year in any well-recognized medical school who have not been called by a local board may enlist in the Enlisted Reserve Corps provided for by section 55 of the national defense act under regulations to be issued by the Surgeon General, and if they are thereafter called by a local board they may be discharged on proper claim presented on the ground that they are in the military service of the United States.
>
> Second. A hospital interne who is a graduate of a well-recognized medical school or a medical student in his fourth, third, or second year in any well-recognized medical school, who has been called by a local board and physically examined and accepted and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon General of the Army to be ordered to report at once to a local board for military duty and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be inclosed a copy of the order of the local board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as a medical student or interne, and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.
>
> Upon receipt of such application with the named inclosures the Surgeon General will forward the case to The Adjutant General with his recommendations. Thereupon The Adjutant General may issue an order to such interne or medical student to report to his local board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue regardless of the person's order of liability for military service. From and after the date so specified such person shall be in the military service of the United States. He shall not be sent by the local board to a mobilization camp, but shall remain awaiting the orders of The Adjutant General of the Army. The Adjutant General may forthwith issue an order discharging such person from the military service for the convenience of the Government.
>
> Three official copies of the discharge order should be sent at once by The Adjuant General to the local board. Upon receipt of these orders the local board should enter the name of the man discharged on Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp; will make the necessary entries to complete Form 164A; and will thereupon give the local board credit on its net quota for one drafted man.

It will be observed that paragraph first of the foregoing deals with internes and students who shall not have been called by a local board, and provides that they may enlist in the Medical Enlisted Reserve Corps under regulations to be issued by the Surgeon General, such enlistment entitling them to discharge from draft if thereafter called.

2. An application for enlistment under this paragraph must be forwarded to the Surgeon General with the affidavit of the applicant, supported by the certificates of his school authorities, showing his present status as interne or student, and particularly how long he has been an interne in the one case or the year of the medical course that he is pursuing in the other.

3. An interne who has served one year or more as such will not be enlisted in the Medical Enlisted Reserve Corps under this regulation.

4. An interne who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, at the end of one year of interneship. Applications for commission in the Medical Reserve Corps from internes who at the expiration of one year's interneship are called for duty as members of the Medical Enlisted Reserve Corps, or from internes whose year of interneship is about to expire, will receive proper consideration.

5. A medical student (undergraduate) who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, upon failing to pass from one class to another, or upon failing to graduate.

6. The second paragraph above quoted deals with internes and students who shall have been called for service by a local board under the selective-draft law, and contemplates their discharge from the draft, upon condition that they shall enlist in the Medical Enlisted Reserve Corps.

7. It will be the policy of the Surgeon General as a rule to recommend discharge from the draft upon the condition indicated, the discharge to be followed by a call to active duty under the enlistment in the Medical Enlisted Reserve Corps at the expiration of a complete year of interneship or upon the failure of the student (undergraduate) to pass to the next higher class or to graduate.

8. Internes and students who are enlisted in the Medical Enlisted Reserve Corps by virtue of these regulations and are not called into active service under such enlistments are required to report their status to the Surgeon General as follows: Internes, at the end of each three months' period, such report to show the total amount of interneship since graduation, and to be countersigned and attested by the medical superintendent of the hospital; students, at the end of each semester, such reports to show whether the students qualified for advancement, and to be countersigned by the deans of their respective schools or by subordinate officers representing the deans.

9. In the execution of these regulations the department will not recognize interneships in hospitals, sanitariums, or other institutions conducted for profit or in small private hospitals (50 beds or less), or new interneships established or added since May 18, 1917, to those previously existing, at any hospital, excepting such as may have been newly established and added by reason of a proportional increase in the bed capacity of such hospital; nor will it recognize interneships in the case of any graduate appointed thereto later than August 1 following his graduation.

(*Cir. Memo., Surgeon General's Office, September 4, 1917.*)

Voluntary Enlistment in Enlisted Reserve Corps, Medical Department.

Section 151*b*, Selective-Service Regulations, provides for voluntary enlistment in the Enlisted Reserve Corps of the Medical Department of the Army, as follows:

> SECTION 151*b*. Under such regulations as the Surgeon General may prescribe and upon receiving permission from the Surgeon General to do so, any medical student, hospital interne, dentist, dental student, veterinarian, or veterinary student may enlist in the Enlisted Reserve Corps of the Medical Department, and thereafter, upon presentation by the registrant to his local board of a certificate of a commissioned officer of the Medical Department of the Army that he has been so enlisted, such certificate shall be filed with the questionnaire and the registrant shall be placed in Class V on the ground that he is in the military service of the United States. There is no other ground upon which such persons (as such) may be placed in a deferred classification.

The object of this provision is to enable the military authorities to place the above-mentioned classes of registrants in the military service where their experience and training can be utilized to best advantage.

For the purpose of obtaining better-qualified officers in the Medical Department, it is the intention of the Surgeon General, if conditions permit, to allow medical, dental, and veterinary students to complete the course for a professional degree; and to allow hospital internes one year of practical training in a hospital. For this reason these men, after enlistment in the Enlisted Reserve Corps, will be left on inactive duty until the desired training has been obtained: *Provided, however*, That they make satisfactory progress and that the conditions for obtaining such training are adequate. They may, however, be called to active duty at any time, if the need for their services is sufficiently urgent.

Since graduated dentists and veterinarians have already received a training adequate for the purposes of the Army, it will not be the policy of the Surgeon General to leave them on inactive duty, but they will be called to active duty as soon after enlistment as their services can be utilized in the enlisted force of the Medical Department. Where practicable, they will be assigned to duty in the line of their professional work.

For the purpose of attaining these ends, the Surgeon General prescribes the following regulations:

1. Permission to enlist in the Enlisted Reserve Corps of the Medical Department will be granted in the case of medical, dental, and veterinary students, hospital internes, dentists, and veterinarians, only to students in, and to graduates of, well-recognized schools.

2. The term "student" in these regulations shall mean a bona fide member of one of the regular classes in the regular course for the professional degree in a well-recognized school. Such bona fide membership should be attested by an affidavit from the dean of the school, or from his authorized agent, duly executed before a notary.

NOTE A.—In the case of medical schools the "regular course" is understood to mean the usual 4-year course leading to the degree of M. D. "special," "premedical," graduate, and "postgraduate" students in medical schools, and persons studying medical subjects outside of schools which are legally authorized to confer the degree of doctor of medicine will not be considered "medical students" within the meaning of these regulations.

NOTE B.—A medical school which offers only part of the regular course for the degree of M. D., may be recognized, provided the school is maintained for this purpose, and the equipment and teaching are equal to the standard of well-recognized medical schools, and provided the students of said school are acceptable for advancement in other well-recognized medical schools, which give a complete course for the degree of M. D. This provision refers particularly to the medical schools of universities which offer only the first two years of the regular medical course.

NOTE C.—In those medical schools which require for the degree of M. D. a fifth year, spent in hospital or laboratory, the members of the fifth class shall be regarded as "hospital-internes" within the meaning of these regulations, and not as "medical students."

NOTE D.—Restrictions corresponding to those for medical schools and medical students in note A shall apply in the case of dental schools and veterinary schools, and in the case of dental students and veterinary students.

3. A "bona fide" student, within the meaning of these regulations, is one who has been duly registered by the school as a member of his class at the beginning of the school term; who has fulfilled the requirements of the school for admission to said class; who has been in attendance since the beginning of the school term, in accordance with the requirements of the school; and has satisfactorily done the work of his class to date. Unless a student has fulfilled all of these requirements, the dean should not issue to him the affidavit mentioned in section 2.

4. In the case of a hospital interne, a dentist, or a veterinarian who is a graduate from a well-recognized school, the fact of graduation from said school must be established by an affidavit from the dean of the school or his authorized agent, duly executed before a notary, which affidavit shall give the full name of the graduate, the name and location of the school, and the year in which the degree was conferred.

5. The term "hospital interne," within the meaning of these regulations, shall indicate a graduate from an approved medical school, or a student in the senior class of such school, who has received an official appointment in a hospital or medical school, which appointment involves either the care of hospital patients, or such advanced scientific study as will fit him for special scientific medical work in the Army.

6. Permission for "hospital internes" to enlist in the Enlisted Reserve Corps of the Medical Department will be granted only when the conditions, in the opinion of the Surgeon General, are satisfactory for the purpose of training medical officers for the Army, and only to such number of internes in an approved institution as the Surgeon General may determine. Such permission will be further dependent upon the time of such appointment as interne, its duration, the character of the work, and the opportunities for training afforded the interne.

7. The Surgeon General will not recognize interneships in hospitals, sanitoriums, or other institutions conducted for profit; or in small private hospitals (50 beds or less); or new interneships in any hospital, if established or added since May 18, 1917; to those previously existing, unless such new interneships are necessitated by and are proportional to an increase in the bed capacity of said hsopital.

8. The approved period of interne service shall not exceed one year; it may begin, under suitable arrangements, any time within the last four months of the medical-school course; it must begin otherwise as soon as practicable after graduation; it must be completed within 16 months, from the last day of the month in which graduation occurs; and, if there is an interval of more than one month between the time of graduation and the beginning of the recognized interneship, the time must be spent in a way that will, in the opinion of the Surgeon General, improve the training of the graduate for Army purposes. This intervening time, even if spent in a recognized hospital position, will not necessarily be counted as part of the year of interne service that may be allowed.

9. Permission for voluntary enlistment in the Enlisted Reserve Corps of the Medical Department is hereby granted by the Surgeon General to medical students, dental students, and veterinary students in well-recognized schools (as defined in sec. 1), provided they present to the recruiting officer affidavits that they are bona fide students in said schools (as required by sec. 2); and recruiting officers are authorized to accept for enlistment in the Enlisted Reserve Corps of the Medical Department those students who fulfill these requirements, and to enlist them, if acceptable under orders and regulations governing enlistments for the United States Army.

10. Permission for voluntary enlistment in the Enlisted Reserve Corps of the Medical Department is hereby granted by the Surgeon General to dentists and to veterinarians who establish, to the satisfaction of the recruiting officer, in accordance with the requirements of section 4, the fact of graduation from a well-recognized school; and recruiting officers are hereby authorized to accept for enlistment in the Enlisted Reserve Corps of the Medical Department those dentists and veterinarians who fulfill these requirements, and to enlist them, if acceptable, under orders and regulations governing enlistments for the United States Army.

11. All others, including "hospital internes," who may be eligible for voluntary enlistment in the Enlisted Reserve Corps of the Medical Department under Selective-Service Regulations, section 151b, and by these regulations, must receive permission individually from the Surgeon General.

(*Memo., Surgeon General's Office, December 15, 1917.*)

Hospital Interneship:

For the purpose of obtaining better-qualified medical officers, it is the intention of the Surgeon General, if conditions permit, to allow a graduate of a well-recognized medical school to serve for one year as an interne in an approved hospital before calling him to active duty in the Army.

The exigencies of the war do not warrant plans for a longer service, and as a rule the interne will be called to active duty at the end of one year of service.

An interne who has already served one year or more as such will not be approved for enlistment in the Medical Enlisted Reserve Corps. He may, if he wishes, apply for a commission in the Medical Officers' Reserve Corps, but with the expectation that he will be called to active duty as soon as needed. An interne for part of a year will be authorized to remain on inactive duty only for the balance of the period of one year, and may be called to active duty thereafter, if needed, irrespective of the duration of his appointment as interne.

The interneship should begin as soon as possible after graduation. In the following provisions the reckoning of time shall be from the last day of that month in which the degree of M. D. is conferred. For one month from that time a free choice from available interneships in approved hospitals will be allowed. No interneship will be approved which begins later than four months from that time. If the interneship begins between one and four months from that time, approval will be given only when the Surgeon General is satisfied that the time intervening between graduation and the interneship will be spent in a way that will improve the training of the graduate for Army purposes.

It is pointed out that, since graduation from medical schools generally comes in June, the above regulations will enable hospitals to continue the system of graded service for internes if the terms of service are arranged to begin on July 1, November 1, and March 1. Graduates in June will be available for appointments beginning July 1 and November 1. Candidates for the service beginning March 1 may be secured from those who graduate at the end of the first semester, or from students who anticipate part of the fourth-year work during the usual summer vacation. Another possible solution lies, in suitable instances, in an arrangement between medical school and hospital, whereby the work as an interne from March 1 to the end of the school year may be accepted by the school as clinical work counting toward the degree.

In the execution of these regulations the department will not recognize interneships in hospitals, sanitariums, or other institutions conducted for profit; or in small private hospitals (50 beds or less); or new interneships at any hospital, if established or added since May 18, 1917, to those previously existing, unless such new interneships are necessitated by and are proportional to an increase in the bed capacity of said hospital.

Within the restrictions set forth in the above regulations, a commissioned officer of the Medical Reserve Corps, or an enlisted man in the Medical Enlisted Reserve Corps, may apply for a position as interne, and may accept such position subject to the later approval of the Surgeon General. In making such engagement with the hospital authorities, it should be clearly understood that the applicant for interneship is in the military service; that he is subject to orders of the Surgeon General; and that he may be called to active duty at any time, should the exigencies of the service demand such action.

Upon receiving such appointment as interne, the commissioned officer or enlisted man should at once apply to the Surgeon General for permission to be continued on inactive duty during the period of his interneship, giving his address, and stating the name and location of the hospital from which he has received his appointment and the date when the interneship will begin.

Upon the receipt of this request, the Surgeon General will forward to him three affidavits—one a formal application blank to be completed by himself, the second to be filled out by the executive officer of the hospital, and the third to be filled out by the dean of the medical school or by his authorized agent. These should be completed and returned together by the applicant to the Surgeon General as soon as possible. When the time of appointment and of beginning service are near together, the applicant may apply to the Surgeon General in season to receive these forms early enough to have them completed and forwarded immediately after the appointment is made.

If the application is approved, two certificates will be sent to the applicant, authorizing him to remain on inactive duty during his interneship. He will retain one copy and deliver the other copy at once to the executive officer of the hospital.

The continuance of this permission to remain on inactive duty is conditioned on the performance of his duties in a manner satisfactory both to the Surgeon General and to the authorities of the said hospital.

During his interneship reports shall be made to the Surgeon General by the interne as follows: A report of the fact when he begins his service, this report to be countersigned by the executive officer of the hospital; a report at the end of each period of three months thereafter, with a statement of the character of the work for that period, and an affidavit from the executive officer of the hospital that he has given his entire time to his duties as interne and that his work has been satisfactorily performed; a notice of the termination of said services as interne whenever it may occur.

(*Cir. Memo. Surgeon General's Office, December 20, 1917.*)

Surgeon General's Policy in Making Appointments from Enlisted Reserve Corps or Students' Army Training Corps.

It will hereafter be the policy of the Surgeon General's Office before recommending for commission members of the Enlisted Reserve Corps, or Students' Army Training Corps, to require one year's hospital interneship before appointment.

This information is furnished in order that a contradictory policy may not be announced in correspondence.

(*Memo., Surgeon General's Office, September 28, 1918.*)

Hospital Facilities for Members of Students' Army Training Corps.

1. In arranging hospital facilities for members of the Students' Army Training Corps, the institutions concerned will be classified as follows:

Class A. Colleges so situated that it will be practicable to send members of the Students' Army Training Corps to an Army hospital.

Class B. Colleges which have adequate hospitals or infirmaries of their own and are not accessible to an Army hospital.

Class C. Colleges which have not adequate hospitals or infirmaries of their own, and which are not accessible to an Army hospital, but which are accesssible to a satisfactory civil hospital.

Class D. Colleges which have not adequate hospitals or infirmaries of their own and which are not accessible to an Army or civil hospital.

2. The surgeons at colleges in class A will send the sick requiring hospital care to the Army hospital.

The surgeons at colleges in class B will ascertain from the commanding officer and the president of the college, if a contract between the Surgeon General and the institution can be made, substantially as indicated in paragraph 3 below.

The surgeons at colleges in class C will confer with the authorities of a near-by civil hospital with a view to having the sick treated there.

The surgeons at colleges in class D will make every effort to get the college authorities to equip a suitable infirmary or hospital and thus come within class B. If he fails to bring his unit into class B, recommendation to this office should be made as to the best plan to meet the situation.

3. The contract mentioned in paragraph 2 above will read substantially as follows:

> It is understood and agreed that the said college shall maintain an adequate hospital or infirmary suitably equipped with beds, bedding, instruments, and other necessaries for the hospital treatment of members of the corps on duty in the college, and shall provide therein proper service acceptable to the Surgeon General for such treatment, including nedicines, dressings, subsistence, laundry, and nursing, but exclusive of professional, medical, and surgical attendance. In consideration of which the Medical Department shall pay to the college (in addition to the amount agreed upon with the Committee on Educational Special Training, under the contract for housing, subsistence, and instruction) the sum of $———— for each day's hospital treatment furnished each such member, said payments to be effected on separate monthly bills, certified on the prescribed forms by the commanding officer of the detachment or unit: *Provided*, That in computing the days of treatment the day of admission and the day of disposition shall each be counted a whole day.

4. Medical officers or contract surgeons will render all professional services to members of the Students' Army Training Corps who are admitted to civil or college hospitals. The relations of the medical officers or contract surgeons under these conditions will be that of a visiting surgeon to a civil hospital. He will exercise no authority over the administration of these hospitals.

5. Information will, therefore, be furnished this office without delay (attention Division of Sanitation), on the following points:

(*a*) The class to which your unit belongs.

(*b*) The rate per man per day, which can be made with civil hospitals in case your unit is in class B.

(*c*) The name of the hospital, the bed capacity and ward rates, per man per day, of the hospital selected for units in class C.

(*Cir. Letter from the Surgeon General, November 1, 1918*).

Local Facilities for Caring for sick Students, Students' Army Training Corps Detachment.

1. In order to enable this office to act intelligently in regard to medical supplies necessary for your detachment, it is directed that you answer fully and concisely the following questions and mail this sheet, in the inclosed envelope, with the least practicable delay:

A. Is there a college infirmary at your college? ————. If so, give its location and facilities for caring for members of your detachment. ————

B. Is there a hospital in the near vicinity? ————. If so, give its location, bed capacity, and facilities for caring for members of your detachment. ————

C. Describe fully the method of caring for sick students in vogue at this college in years prior to the beginning of the present crisis. ————

D. Is there one or more reliable druggists in the town with whom arrangements can be made to supply medicines? ————

(*Cir. Letter from the Surgeon General. Undated*).

Disposition of Medical Department Property and Personnel at Students' Army Training Corps Units.

The following is published for your information and guidance in connection with the demobilization of the S. A. T. C.:

1. *Disposition of medical property.*—All property pertaining to the Medical Department should be carefully packed and shipped to the nearest Army camp or post on Government bill of lading.

If property is to be shipped to an Army camp or cantonment, the packages should be plainly addressed to "Camp Medical Supply Officer, Camp————"; if to an Army post packages should be addressed to "The Surgeon, Fort ————." Invoice of property should be made in quadruplicate on Form 28, Medical Department. One copy is sent to the Surgeon General, one retained, and two forwarded to the medical supply officer or surgeon who is to receive the property. Notation should be made on the invoice, "Shipped per authority Memorandum D 34 S.G. O., December 2, 1918." Prepare final return on Form 17 and 17*a* and *c*, Medical Department, and forward same direct to the Surgeon General. As soon as possible, prepare and submit to this office voucher on Form 355, W. D., to cover all outstanding hospital bills and voucher on Form 330, W. D., accompanied by Form, 12 M. D., to cover all outstanding bills for local purchase of medicines, dressings, etc. It is important that all bills be paid as soon as possible after the unit has been mustered out of service.

2. *Disposition of retained medical records.*—These should be securely wrapped, the contents and name of unit plainly marked on the package, and forwarded to the Surgeon General in accordance with paragraph 425, M. M. D. The usual current report (sick and wounded, sanitary, etc.) should be completed and forwarded in the usual manner.

3. *Disposition of enlisted men, Medical Department.*—These men will be taken over by the department commander. Arrangements have been made with the Committee on Education and Special Training to issue instructions to commanding officers of units to notify department commanders when Medical Department enlisted men are no longer required so that orders may be issued by the department for their transfer.

4. *Medical officers.*—Medical officers on duty with Students' Army Training Corps units will be discharged by the department commander when their services are no longer required, in accordance with telegram A. G. O., November 26, 1918, to department commanders, and Circular 75, W. D., November 20, 1918, except medical officers in third category, and who are less than 32 years of age. The names of these officers should be telegraphed to this office.

5. *Contract surgeons.*—Contract surgeons will be notified by wire by this office the date their contracts are annulled. Upon receipt of this telegram, prepare final pay voucher on Form 336, W. D., and mail voucher to this office together with your contract. Form 336, W. D., may be obtained from the commanding officer. At units where more than one contract surgeon is on duty, the senior should telegraph to this office the names of junior contract surgeons as rapidly as their services can be spared, so that contracts may be annulled.

(*Memo. for all surgeons of the Students' Army Training Corps, Surgeon General's Office, December 2, 1918.*)

ENLISTED PERSONNEL.

Special Service in the Medical Department.

Many patriotic citizens, believing that their special skill would be of benefit to our soldiers, are offering their services to the Government and desire assignment to the Medical Department for this purpose. The services of all such persons, if otherwise eligible for enlistment, will be welcomed by the Surgeon General of the Army. However, they, like everyone else who enters this department, must enlist for general service in the Medical Department, and must be prepared to serve in any capacity in which their services may be required. It is not practicable to enlist anyone on the basis that he will serve only in a limited special capacity. Nevertheless, as far as may be found practicable, efforts will be made to utilize for the benefit of our soldiers all special forms of training possessed by those enlisted in the Medical Department. Osteopaths, pharmacists, and other specially trained persons may thus, by such enlistment, place their services where they may be made available for our soldiers as far as conditions warrant.

The problem of commissions for such specially trained persons has been raised by two bills introduced into Congress, and the opinion of the Surgeon General is sought frequently as to the advisability of such legislation. House bill 5407 would provide commissions for osteopathic physicians, and House bill 5531 would do the same for pharmacists.

The Surgeon General has given this matter careful consideration and has sought the advice of professional men of national reputation. It is felt that the needs of the soldiers can be provided for satisfactorily under the present organization; that the department will be severely taxed to provide, under the present form of organization, the essentials of medical care for our rapidly increasing Army, and that any change in the form of organization at the present time—except such as are found necessary and are requested by the Surgeon General—would not only delay these essential provisions for the medical care of our soldiers, but might prevent the inauguration of a number of new and important measures planned for their benefit. In other words, these bills, while intended for the benefit of the soldiers, are quite as likely to work to their detriment by lessening the total efficiency of the Medical Department in the existing crisis.

To the extent that these bills are designed for the benefit of the persons desiring to enter service, through increased rank and pay, it is felt that the questions involved may well await a less critical period of the war, when their consideration could be undertaken with less danger of neglecting the recognized, urgent needs of the soldiers.

(*Memo. to osteopaths, pharmacists, and others seeking special service in the Medical Department, Surgeon General's Office, February 13, 1919.*)

Enlisted Personnel (Showing Proportions of Various Classes).

1. The following table, showing the various proportions of noncommissioned officers, cooks, first class privates, and privates with the total enlisted detachment for hospitals varying in size from 500 to 2,000 beds, is furnished for your information.

2. It will be noted that the column headed "Master hospital sergeants and hospital sergeants" is subdivided into "Master hospital sergeants not to exceed." The combined column shows first entry "1" and second entry "3." It is intended that there shall not be a greater number of master hospital sergeants and hospital sergeants than three, and that there shall not be more than one master hospital sergeant in the three of these grades. Promotions to the grade of corporal and sergeant may be made by commanding officer of the hospital within the limits provided by the table. Promotion to the grade of master hospital sergeant, hospital sergeant, and sergeant first class will be recommended to the Office of the Surgeon General within the limits provided by the table.

3. As soon as enlisted men are available, they will be furnished to the hospitals in the numbers shown in the last column. If at any time emergency requires detail of larger numbers the commanding officer will make application for the number of enlisted men required for efficient administration of the hospital.

4. A detachment will be furnished by the Quartermaster General's Office, consisting of one officer, captain, or lieutenant, Q. M. O. R. C.; two quartermaster sergeants, Q. M. C.; one sergeant, first class, Q. M. C.; seven sergeants, Q. M. C. (one stenographer, one clerk, one overseer, one blacksmith, one carpenter, one engineer); three corporals, Q. M. C. (one storekeeper, two chauffeurs); one cook, Q. M. C.; two privates first class, Q. M. C. (firemen); five privates, Q. M. C. (laborers). This detachment is intended for duty about the hospital. Central heating plants and other utilities, it is expected will be conducted by the camp quartermaster. The quartermaster detachment mentioned is now being assigned by the Quartermaster General's Office, and you are directed to make application for its assignment should unnecessary delay occur.

Beds (men).	Master hospital sergeants and hospital sergeants.		Sergeants.	Sergeants first class.	Corporals.	Total noncommissioned officers.	Cooks.	Privates first class.	Privates.	Total.
	Master hospital sergeants not to exceed—	Hospital sergeants.								
200	1	1	8	15	3–5	(1)	12	127	31	200
500	1	3	10	22	10	45	14	201	40	300
800	1	3	13	27	12	55	17	240	48	360
1,000	2	4	16	28	12	60	19	267	54	400
1,100	2	4	16	30	12	62	20	286	57	425
1,200	2	5	16	30	13	64	21	305	60	450
1,300	2	5	17	31	13	66	22	323	64	475
1,400	2	5	17	32	14	68	23	341	68	500
1,500	2	5	18	33	14	70	24	359	72	525
1,600	2	5	18	34	15	72	25	378	75	550
1,700	2	5	20	34	15	74	26	396	79	575
1,800	3	6	20	35	15	76	27	415	82	600
1,900	3	6	21	35	16	78	28	433	86	625
2,000	3	6	21	36	17	80	29	451	90	650

[1] Limited to 30.

(*Cir. Letter, Surgeon General's Office, March 1, 1913.*)

Enlisted Personnel (promotions).

The Surgeon General directs me to say that so much of paragraph 2, letter this office, March 1, 1918, as states that "Promotions to the grade of corporal and sergeant may be made by the commanding officer of the hospital within the limits provided by the table. Promotions to the grades of master hospital sergeant, hospital sergeant, and sergeant first class will be recommended to the Office of the Surgeon General within the limits provided by the table," should be amended to read as follows: "The commanding officer is hereby delegated to promote to all grades, Medical Department, to and including sergeant first class, within the limits provided by the table, and to make reductions when in his judgment the same may be necessary." The warrants will be signed: "For the Surgeon General;" also to make the necessary ratings under paragraph 1420½, Army Regulations. Requests for promotion to the grade of master hospital sergeant and hospital sergeant will be forwarded to the Office of the Surgeon General.

Acknowledge receipt by indorsement hereon.

(*Cir. Letter, Surgeon General's Office, March 27, 1918.*)

Discharge of Enlisted Men.

1. From information received in this office it appears that an enlisted man discharged on surgeon's certificate of disability, who at time of discharge was confined to bed in hospital and unable to travel without attendants, was reported three days later as not in a condition to be moved and remained a patient in hospital until death occurred some days later.

2. It is directed that special consideration be given the matter of discharging enlisted men on surgeon's certificate of disability when there is reason to believe or suspect that the disease or disability from which the soldier is suffering may terminate fatally within a short time.

3. When a soldier is discharged on surgeon's certificate of disability, and it is found that he is not in a condition to travel, he is entitled to and should receive further care and treatment in hospital, as provided in paragraph 1452, A. R., until such time as he is able to undertake travel to his destination without prejudice to his condition.

(*Cir. Letter, Surgeon General's Office, April 29, 1918.*)

Mechanics Available for Education and Special Training.

1. In compliance with letter from The Adjutant General of the Army, the Committee on Education and Special Training held a meeting on May 10, with Lieut. Col. R. I. Rees, General Staff, presiding, and Maj. Granville Clark, General Staff, recorder.

It was stated that there would be a total of 7,434 mechanics available for transfer and assignment between June 7 and 20, 1918, as follows:

Occupations:	Number of men in training.
Automobile mechanics	3,511
Blacksmithing	549
Carpentry	495
Bench woodworking	530
Electrical work	490
Instrument repairing	195
Machine-shop work	404
Gas-engine repairing	410
Sheet-metal work	250
Gunsmithing	575
Welding	25
Total	7,434

The distribution of these men was arranged for among the departments represented. It was found that there was a deficiency in the following occupations: Automobile mechanics, electrical workers, gas-engine repairers, molders, the demand being in excess of the number available for distribution. In other occupations, with one exception, that of bench woodworkers, the demand was about equal to the supply.

2. It was stated that there would be about 10,000 additional men available in July, and at least that number, and possibly a great many more, in August, September, and October.

3. It is suggested that the heads of all divisions who desire to secure the services of a number of these mechanics, if required, make timely requisition in order that allotments can be made about one month before the men become available.

(*Office Memo. No. 1, Surgeon General's Office, May 14, 1918.*)

Selection of Enlisted Men for Promotion.

1. The General Staff has requested this office to obtain a classification of the enlisted personnel engaged in the work of physical reconstruction in your hospital, so that qualified men may be promoted to noncommissioned grades. A classification is requested.

2. It is suggested that in making this classification for promotions those men should be recommended who have shown high efficiency and intelligence in Army service, especial attention being paid to men with superior education.

(*Cir. Letter No. 87, Surgeon General's Office, February 12, 1919.*)

Telephone Operators for Signal Corps.

1. The following letter has been received at the Office of the Surgeon General from the Office of the Chief Signal Officer, Special Service Division, Commercial Service Section:

From: Office of Chief Signal Officer, March 28, 1919.
To: The Surgeon General of the Army.
Subject: Telephone operators.

1. The Signal Corps is experiencing some difficulty in securing telephone operators and it is believed that in many instances convalescent soldiers could either be placed on extra duty, or if discharged, placed on duty as telephone operators.

2. It is suggested that the Surgeon General of the Army furnish the Signal Corps approximately 200 names of convalescents who would be interested in such an assignment. The loss of a lower limb would not interfere in any way with their work.

3. It is suggested that these names be obtained from various localities in the United States, the list to be proportioned about as follows:

Southeastern Department	50	Central Department	40
Eastern Department	50	Northeastern Department	10
Southern Department	40	Western Department	10

4. No assurance can be given that all of this number can be placed, but if such a list can be obtained every effort will be made to care for as many as possible.

By authority of the Chief Signal Officer:

(Signed) F. R. Curtis,
Colonel, Signal Corps

2. In subsequent indorsement dated April 2, 1919, the statement is made that:

1. Salaries being paid at the present time by the Signal Corps range from $60 to $90, and it is not believed there will be a change in this schedule during the next fiscal year.

By authority of the Chief Signal Officer:

(Signed) F. R. Curtis,
Colonel, Signal Corps.

3. It is requested that you obtain the names of convalescent soldiers in your hospital and camp who are assigned to this duty, or who may elect to serve in this capacity after discharge.

4. The lists should include after the name of each soldier, the serial number, military organization, home address, and present station. These lists should be sent direct to the Office of the Chief Signal Officer, attention of the Special Service Division, Commercial Service Section, Washington, D. C.

(*Cir. Letter No. 169, Surgeon General's Office, April 7, 1919.*)

Enlisted Personnel in Physiotherapy.

1. It is requested that a list of the enlisted personnel assigned to, or inducted by the Physiotherapeutic Section of the Department of Physical Reconstruction, be sent this office, attention Division of Physical Reconstruction, Physiotherapeutic Section.

2. It is requested that there be briefly noted the rating and the special technical training of each man so listed.

(*Cir. Letter No. 202, Surgeon General's Office, May 6, 1919.*)

Record Card Form 627, A. G. O.—Enlisted Men of Staff Corps and Departments.

1. Attention is invited to paragraph 41, Manual for the Medical Department which directs that—

> When a man is enlisted for, reenlisted in, or transferred to the Medical Department, the medical officer who first receives him will prepare and forward a record card of the soldier directly to the Surgeon General, except in the case of a man stationed in the Philippines, Hawaiian, or Panama Canal Department, when the card will be sent through the department surgeon (as amended by C. M. M. D. No. 3, September 29, 1917).

2. It is directed that in cases of those who have been enlisted for, reenlisted in, or transferred to the enlisted forces of the Medical Department since February 28, 1919, a record card be furnished this office and that in future paragraph 41 of the Manual for the Medical Department be strictly complied with.

(*Cir. Letter No. 223, Surgeon General's Office, May 24, 1919.*)

Premanent Enlisted Men.

1. Information is desired in this office as to the number of enlisted men on duty at your hospital who are not of the temporary force and who will not be entitled to discharge from the service four months after the period of the emergency is ended.

2. Reply will be forwarded at once by wire to this office, attention Hospital Division, and will show the total number of enlisted men who will not be entitled to discharge four months after the period of the emergency is ended.

(*Cir. Letter No. 238, Surgeon General's Office, June 17, 1919.*)

Medical Department Recruiting.

1. Attention of all medical officers is invited to the message of the Secretary of War and the memorandum from the Chief of Staff to all recruiting officers under date of June 28, 1919, emphasizing the great and immediate importance of their task. Recruiting in the Army is second in importance only to demobilization. In view of the fact that in the near future all men drafted for the emergency will have been discharged, the Medical Department realizes that every effort must now be made to secure enlistments and reenlistments to meet its present needs and future requirements. Recruiting is now being vigorously pushed by the general recruiting service and special camp organizations and department recruiting services. The success of a recruiting campaign depends largely upon enthusiastic, sincere, and intense interest in the work by the entire commissioned personnel who come in contact with available recruits, by coordination of all activities, and by cooperation not only within the department, but without. With this end in view the following Medical Department recruiting campaign will be inaugurated promptly by all responsible officers:

(*a*) *Department surgeons.*—Instructions will be issued immediately by department surgeons to the senior medical officer of all posts and commands under their jurisdiction providing for a campaign within their department for enlistments and reenlistments. Adequate measures will be taken to secure a thorough canvass among all enlisted men drafted for the emergency and serving in the Medical Department to secure a maximum number of reenlistments either for one or three years. Promises not covered by existing orders must not be made to enlisted men to induce reenlistment, and in this connection attention is called to the recruiting slogan "no more broken promises." Furloughs will be granted in all cases of reenlistments, immediately if practicable, and not later than one month of date of reenlistment, as provided in existing orders. The granting of furloughs should be encouraged rather than discouraged as it is a most effective weapon in securing recruits. The interest and support of the regular enlisted men must be secured and their services utilized as recruiting agents. Many original enlistments may be obtained through them if their cooperation is secured, and it rests upon the senior medical officer of each command to secure this result. This campaign for recruits will be continued vigorously during the remainder of the demobilization period. Every endeavor will be made to secure original enlistments by local campaigns, if practicable, in communities adjoining posts and stations, it being understood that such activities may be initiated without expense to the Government except as authorized specifically in A. G. O. telegram "ICROS five" and as covered by Circular 165, War Department, 1919.

(*b*) *Camp surgeons.*—The following telegram was sent from the Office of the Surgeon General to all camp surgeons July 7, 1919, and through the port surgeons, port of embarkations, July 8, 1919, to all camp surgeons operating under them: "Select and have designated promptly through camp commander suitable medical officer as assistant to camp recruiting officer for inaugurating and maintaining energetic campaign for enlistments and reenlistments, Medical Department; among medical units, camp and base hospital, and especially medical units sent your camp for demobilization. Officers so selected should devote all time to this duty. Medical Department must supplement general recruiting service in obtaining necessary enlisted personnel for present and future requirements, which duty is second only to demobilization. This recruiting campaign must be energetically maintained during remainder demobilization. Recommend you supplement local camp activities by arranging through camp commander and camp recruiting officer for Medical Department recruiting party under provisions of telegram 'ICROS five" heretofore sent to camp commanders by Adjutant General. These activities as mentioned above have the sanction of The Adjutant General. Enlistment Medical Department now authorized for one year, with or without prior military service."

Camp recruiting since its inauguration has been highly successful. For the week ending June 28, 1919, the number of all enlistments from camps totaled 4,974, against 1,639 enlistments made at depots and depot posts. It is requisite that all camp surgeons infuse the necessary vigor and punch into Medical Department recruiting activities as outlined above. Camp commanders of demobilization centers, under Adjutant General's telegram "ICROS five," have authority to arrange with their district recruiting officer for recruiting parties to canvass neighboring communities. Such recruiting parties heretofore have been successful and it is desired that Medical Department canvassing parties be organized wherever practicable.

If certain camps can not act under authority in telegram "ICROS five," special authority may be obtained from The Adjutant General of the Army to apply its provisions to that camp, provided a plan is formulated sufficiently comprehensive to assure reasonable success. Attention, however, is invited to the fact that the department looks upon camp recruiting activities in relation to its present drafted men as one of its most profitable fields for the procurement of enlisted personnel. All these measures should only be undertaken with the cooperation and support of camp authorities. Medical officers selected by camp surgeons for recruiting work should believe in their mission and have a personal enthusiasm for it. It is desired that every Medical Department enlisted man sent to camp for discharge be approached as to the desirability of his reenlistment, if qualified. In many cases at demobilization centers this may be difficult, owing to the short period of time between the soldier's arrival in camp and his subsequent discharge, but well-organized recruiting systems have been obtained in some demobilization centers and it is obligatory that the Medical Department have active representatives in this service.

(*c*) *Commanding officers, general hospitals.*—On July 1, 1919, telegram was sent from the office of the Surgeon General to the commanding officers of all general hospitals directing them to appoint recruiting officers under Circular 101, W. D., 1919, and to make every endeavor to secure enlistments in the Medical Department. The commanding officer of each general hospital will immediately take the necessary steps to inaugurate an intensive recruiting campaign along the lines heretofore suggested to camp surgeons. A canvass will immediately be made among the men drafted for the emergency and it is desired that this work be maintained until demobilization shall have been completed. It would appear that some physically qualified applicants may be secured from patients eligible for discharge from the hospital.

In these recruiting activities it has been shown that no great success may be anticipated in an organization recruiting campaign unless the following conditions have been obtained: First, the selection of an officer as recruiting officer who possesses the necessary personal qualifications for the work, and in order to qualify in this respect he must sincerely believe in his mission and be capable of instilling enthusiasm into all parts of his recruiting organization; second, adequate and enthusiastic enlisted personnel as assistants to the recruiting officer; third, the hearty support and interest of the administrative commissioned personnel of the hospital.

The provisions of Adjutant General telegram designated "ICROS five," sent May 31, 1919, to all officers of the general recruiting service has been extended to the following Army general hospitals by The Adjutant General of the Army: Army and Navy General Hospital, Hot Springs, Ark.; General Hospital, San Francisco, Calif.; Walter Reed General Hospital, Takoma Park, D. C.; General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 3, Colonia, N. J.; General Hospital No. 4, Fort Porter, N. Y.; General Hospital No. 6, Fort McPherson, Ga.; General Hospital No. 8, Otisville, N. Y.; General Hospital No. 12, Biltmore, N. C.; General Hospital No. 16, New Haven, Conn.; General Hospital No. 19, Oteen, N. C.; General Hospital No. 20, Whipple Barracks, Ariz.; General Hospital No. 21, Denver, Colo.; General Hospital No. 25, Fort Benjamin Harrison, Ind.; General Hospital No. 26, Fort Des Moines, Iowa; General Hospital No. 28, Fort Sheridan, Ill.; General Hospital No. 30, Plattsburg Barracks, N. Y.; General Hospital No. 31, Carlisle, Pa.; General Hospital No. 41, Fox Hills, N. Y.; General Hospital No. 42, Spartanburg, S. C.; General Hospital No. 43, Hampton, Va.

This telegram is contained in a letter from The Adjutant General of the Army to the commanding general of demobilization centers, under date of June 9, 1919, as follows:

WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
Washington, D. C., June 9, 1919.

From: The Adjutant General of the Army.
To: The commanding general of demobilization centers.
Subject: Cooperation with general recruiting service (A. G. O. telegram ICROS 5).

1. The following telegram from this office, referred to as "ICROS 5," sent to all officers of the general recruiting service, May 31, 1919, is repeated for your information and guidance:

"1. This telegram will be referred to as ICROS 5.

"2. You are authorized to make such trips as may be necessary to nearest demobilization camps in your district to report to the commanding general and consult with the camp recruiting officer, in the interest of cooperation between the two services.

"Officers and men of returning divisions are particularly desirable for recruiting purpose in the localities where they are known.

"During the present emergency, you should have a sufficient number of officers and men with your party to thoroughly cover your territory with substations or canvassing parties.

"3. Request camp commander to submit the names of those suitably qualified and available for permanent party with a view of their transfer to general recruiting service and assignment your party by this office.

"Class three officers only can be detailed, but if other exceptionally well-qualified officers are desired a report will be made with a view to their temporary use.

"4. Camp organizations are also desirous of sending out canvassing parties to obtain recruits for their units.

"For this purpose, you are authorized to arrange with camp commander for a sufficient number of those parties and the itinerary of each. Enlisted men for these canvassing parties will be attached to your party for temporary duty on order from the camp commander.

"While on this duty you are authorized to order these soldiers to those places within the territorial limits of your district mentioned on the itinerary approved by you and the camp commander for canvassing duty, and to furnish commutation of subsistence and quarters under the same conditions as govern enlisted men of the general service Infantry of your recruiting party. Upon completion of this duty, the soldiers will be ordered to return to their proper stations.

"5. A suitably qualified officer, designated either by you from those under your command or by the camp commander from the camp personnel, will be placed in charge of each party, who will be personally responsible for the conduct of the party.

"Officers so designated will not travel with the enlisted men, but will precede their parties by at least 12 hours for the purpose of making necessary arrangements and obtaining advanced publicity.

"He will meet and work with his party at each stop. No stop will be for more than 10 days. Authority is hereby granted as necessary in the military service to issue the necessary travel orders for these officers based on the itineraries approved by the camp commander and yourself. No itineraries need be submitted to this office in advance.

"6. A report will be made to this office as soon as arrangements have been made. Complete reports in writing will be made at least every five days by the officer in charge of each of these organization canvassing parties, to be sent through you to this office. Carbon copies will be sent to the camp commander.

"7. Applicants accepted by these organization canvassing parties will be sent to the camp for completion of enlistment. Efforts will be made to obtain recruits for all branches of the service and accepted applicants for services not represented at the camp will be forwarded to the nearest recruit depot in accordance with existing instructions.

"HARRIS."

II. The above is intended to prepare the way for more extended recruiting activities by organizations under your command which was first authorized by Circular 165, W. D., 1919. For the present, however, and as long as a considerable number of units are passing through your camp for demobilization, the principal recruiting efforts should be directed toward obtaining reenlistments from among soldiers eligible for discharge as outlined in telegram from this office of May 31, referred to as ICROS 4.

By order of the Secretary of War.

J. T. KERR,
Adjutant General.

Pursuant to this authority, the commanding officer of each above-mentioned general hospital will arrange with the general recruiting officer of the district in which the hospital is located for the operation of small Medical Department recruiting parties in selected towns, cities, and other communities in proximity to the hospital. Under authority of ICROS 5 a conference with the district recruiting officer is provided. All details concerning travel, subsistence, and method of recruiting procedure should be arranged with this officer. The medical recruiting officer in charge of a party should arrange for some Medical Department exhibit to interest the public. It is desired that these parties travel by motor transport if practicable. A gas-mask drill, first-aid drill, display of hospital tent with bedding and clothing unit, is suggested to secure public interest. Recruits procured by these parties should be sent to the general hospital to which the particular party belongs, either directly or indirectly through the district recruiting officer's office, as may be arranged by him.

(*d*) *Surgeons, ports of embarkation.*—The necessary instructions will be issued by port surgeons effecting the immediate designation of a recruiting officer or assistant recruiting officer in each hospital and other unit under their jurisdiction, using such of the preceding instructions to camp surgeons and the commanding officers of general hospitals as may be applicable to secure an energetic recruiting campaign for Medical Department recruits. It would appear that considerable success may be secured by small local parties working from debarkation and embarkation hospitals in New York City. These parties may be operated without involving additional expense to the Government not requiring the application of the principles of telegram ICROS 5. The cooperation of the district general recruiting officer should, however, be obtained before such work is attempted. Attention is invited to the fact that original enlistments in the Medical Department are now authorized for one year without previous military service. It is especially desired that medical officers in charge of medical units sent from camps under the jurisdiction of the port surgeon to other demobilization centers for discharge be instructed to initiate recruiting activities among the men of the command while traveling to place of discharge and upon arrival at their respective demobilization centers to report the names of all possible applicants for reenlistment to the camp surgeon for transmission to the medical officer detailed as assistant camp recruiting officer.

(*e*) *Senior medical officer, independent posts and commands.*—The senior medical officers of all independent posts and other commands not covered by these instructions will take the necessary steps to secure an immediate and intensive recruiting campaign for reenlistment in the Medical Department by a thorough canvas among all Medical Department enlisted men drafted for the emergency, and in addition thereto will endeavor to secure all possible original enlistments for the Medical Department along such lines as may be locally authorized.

SPECIAL REPORTS.

All recruiting officers of general hospitals or other medical units authorized to appoint recruiting officer and all assistant recruiting officers of camps, posts, or other commands will report by letter weekly at the close of business Saturday to the Surgeon General, Recruit Section, Personnel

Division, room 230, giving (*a*) the number of Medical Department enlistments or reenlistments by organizations secured during the period covered by the weekly report, stating average weekly enlisted strength of each organization; (*b*) any important information in reference to recruiting activities, results accomplished, methods of procedure, and other information of general interest to medical officers detailed on Medical Department recruiting. This information is required in order that a bimonthly bulletin may be published by this office giving a summary of the various Medical Department recruiting activities throughout the service to promote efficiency and stimulate interest in this most important mission.

NOTE.—This report is to be rendered in addition to other reports required by existing orders. First report to include all enlistments and reenlistments obtained since recruiting was resumed.

(*Cir. Letter No. 257, Surgeon General's Office, July 15, 1919.*)

Bands at General Hospitals.

1. The following letter from The Adjutant General of the Army is furnished for your information and guidance:

From: The Adjutant General of the Army.
To: The Surgeon General.
Subject: Bands at General Hospitals.

In a letter of May 20, A. G. 322.94, authority was granted for the issue of band instruments and sheet music for bands of 28 pieces at the following general hospitals:

The Walter Reed General Hospital at Washington.
The general hospital for tuberculosis now at Fort Bayard, N. Mex.
The general hospital for tuberculosis now at Denver, Colo.

This letter stated, further: "Bands may be organized from personnel of the Medical Department, but this will not be construed to authorize personnel nor grades in excess of the quota now provided by law."

The obvious intent of this letter was to provide instruments and sheet music for the use of volunteer bands composed of such enlisted men as desired to play in them in addition to their other duties.

It has come to the attention of this office that at Walter Reed Hospital men who play in the band have no other duties.

You will take the necessary steps to insure that the authorization of these volunteer bands will in no way increase the personnel on duty at these hospitals over the number necessary to perform the regular duties connected with the hospitals.

Those men whose sole duty is playing in the band will either be discharged or, if practicable, used to replace other men available for discharge, in accordance with the general policy of discharging emergency men as fast as they can be spared in the order of relative merit of their reasons for requesting discharge.

(*Cir. Letter No. 272, Surgeon General's Office, July 23, 1919.*)

Importance of Medical Department Recruiting.

1. The Medical Department of the Army has entered upon a recruiting campaign. These activities were necessitated by progressive losses in enlisted personnel through discharge and the realization that the general recruiting service would be unable to furnish adequate replacements in the short period of time remaining before the discharge of men drafted for the emergency. The present influx of recruits to our general recruit depots approximates numerically the normal rate recorded before the war. This source of supply will be inadequate to meet the needs of the department, and there will be a shortage of men which must not be overlooked. Vigorous and enthusiastic recruiting activities by all general hospitals and by the Medical Department representatives at all camps, posts, arsenals, and other stations will accomplish much to offset the deficit.

It is desired that all Medical Department commanding officers and senior medical officers responsible for the initiation of recruiting activities under S. G. O. Circular Letter No. 257, July 15, 1919, see that all prescribed recruiting activities are instituted at once and executed with proper vigor so that the department may feel that it has performed its full duty in recruiting its ranks.

(*Cir. Letter No. 280, Surgeon General's Office, August 13, 1919.*)

Transfer of Emergency Men in the Medical Corps.

1. The following communication from The Adjutant General of the Army under date of August 16, 1919, is quoted for the information and guidance of all concerned:

1. The policy of transferring from one station to another of emergency enlisted men of the Medical Corps is approved under the following conditions:

(*a*) That such men are reported surplus by the commanding officer at the camp, post, or station from which they are to be transferred.

(*b*) That they be transferred only to general hospitals.

(*c*) That no men be transferred who were enlisted or inducted prior to August 1, 1918.

(*d*) That no men be transferred from a camp, post, or station in which there are any Medical Corps enlisted men who have established their eligibility for discharge under the provisions of Circular 77, W. D., 1918, as amended, or in which there are emergency men who were inducted or enlisted prior to August 1, 1918, physically eligible for discharge, unless it is definitely known that the latter will be discharged by September 30, 1919.

2. Telegraphic reports on August 31 of all emergency Medical Corps men surplus for transfer under above conditions have been called for and men reported will be assigned in accordance with your recommendations.

It is not believed that transfers of emergency men will be justified after September 30, 1919.

3. It is understood to be your plan to segregate, as far as possible, all emergency Medical Corps men in general hospitals and that on September 30, 1919, there will be in the continental United States, Canal Zone, and insular possessions practically no emergency men of the Medical Corps who were enlisted or inducted prior to August 1, 1918.

4. You are informed that, with the provisos named in paragraph 1 above, orders will issue for the transfer of men requested by you as follows:

From Camp Jackson, S. C., to Fort McPherson, Ga., 40 enlisted men.
From Camp Grant, Ill., to Fort Sheridan, Ill., 15 enlisted men.
From Camp Lee, Va., to General Hospital No. 43, Hampton, Va., 20 enlisted men.
From recruit depot, Jefferson Barracks, Mo., to General Hospital No. 28, Illinois, 30 enlisted men.

(*Cir. Letter No. 287, Surgeon General's Office, August 21, 1919.*)

Discharge of Emergency Men by September 30, 1919.

1. The following letter and indorsement from The Adjutant General of the Army under date of August 25, 1919, is quoted for the information and guidance of all concerned:

1. You will cause each organization commander to take action with a view to discharging, in accordance with current instructions, by September 30, 1919, all men enlisted or drafted for the emergency who are physically eligible for discharge and who are not in confinement awaiting trial or serving sentence by court-martial.

No man of this class will be retained in the service after that date unless it has been definitely determined in each individual case that he can not be spared or replaced by an available enlisted man of the Regular Army, or, under existing authority, by a civilian, or unless he has requested in writing to remain temporarily in the service or is included in Medical Corps personnel surplus for transfer to a general hospital, as provided in A. G. O. telegram dated August 15, 1919.

2. Not later than October 10, 1919, you will make a report to The Adjutant General, attention room 336, showing for date of September 30, 1919, the number of enlisted men in each regiment and other separate units not constituting part of a regiment, classified as follows:

First. Men enlisted or drafted for the period of the emergency.

Second. Men who have been recalled to active service from the Regular Army Reserve.

Third. Men who enlisted prior to April 2, 1917, and who, by December 31, 1919, will have completed the period of active service prescribed to make them eligible for furlough to the reserve.

Fourth. Men who enlisted prior to April 2, 1917, and who will not have become eligible for furlough to the reserve by December 31, 1919.

Fifth. Men who enlisted subsequent to February 28, 1919, for one year.

Sixth. Men who enlisted subsequent to February 28, 1919, for three years.

3. Where emergency men are retained after September 30, full explanation will be made as to the necessity for same, and estimate will be given as to date when all such men can be dispensed with. There will be no relaxation of effort to discharge these men, and a report will be rendered when all under your command have been discharged.

You will notify all under your jurisdiction.

By order of the Secretary of War:

ALBERT GILMOR,
Adjutant General.

[1st Ind.]

220.81 (Misc. Div.).
War Department, A. G. O., August 25, 1919.
To all bureau chiefs, who are directed to render this report for all organizations under their immediate jurisdiction, who are not also under the jurisdiction of a department commander.

The Surgeon General will render a report for all general hospitals.

(*Cir. Letter No. 294, Surgeon General's Office, September 3, 1919.*)

Cooks and Bakers.

1. Under date of September 29, 1919, the following communication from The Adjutant General of the Army has been received:

With view to replacing emergency men who now fill these positions at different hospitals the following information is requested:

(*a*) Number of mess sergeants, cooks, and bakers other than the personnel of the Medical Department.

(*b*) Number of civilians employed as cooks and bakers, with rate of pay.

By order of the Secretary of War:

(Signed) THOMAS COLEMAN,
Adjutant General.

2. In order to comply with this request, it is directed that the information desired under (*a*) be forwarded, that related to (*b*) already being on record in this office.

(*Cir. Letter No. 310, Surgeon General's Office, October 1, 1919.*)

Promotion of Noncommissioned Officers, Medical Department.

1. Authority heretofore granted by the Surgeon General of the Army to the commanding officers of general hospitals, camp surgeons, and others to make promotions to noncommissioned officer grades of the Medical Department, to and including the grade of sergeant, first class, is hereby revoked.

2. Pre-war methods of making promotions will now govern. No additional noncommissioned officers will be appointed in the Medical Department except as a result of the regular examinations.

3. Recommendation has been made to The Adjutant General of the Army for the revocation of Paragraph IX, General Order No. 139, War Department, 1917; Paragraph II, General Order No. 66, War Department, July 12, 1918; Paragraph II, General Order No. 70, War Department, June 2, 1917; and Paragraph I, General Order No. 102, War Department, August 4, 1917.

(*Circ. Letter No. 339, Surgeon General's Office, October 31, 1919.*)

Discharge Emergency Enlisted Personnel, Medical Department.

1. It is desired to effect the separation from the service of all enlisted men of the Medical Department brought into service for the period of the emergency who desire to return to civil life, by December 31, 1919.

2. To fulfill this policy it is necessary that the strength of detachments of the Medical Department be reduced to the minimum absolutely necessary to perform the functions of the department.

3. Replacements are being and will continue to be sent to general hospitals, posts, and stations as rapidly as they become available.

4. It is not intended to discharge any enlisted men who entered service for the period of emergency if they express in writing a desire to continue in service.

5. Based on the minimum strength absolutely necessary to perform the functions of the Medical Department, commanding officers of general hospitals, camp surgeons, surgeons at independent posts or stations will on December 5 furnish this office a report showing:

(*a*) Total strength of detachment, Medical Department.

(*b*) Minimum number required.

(*c*) Number of temporary enlisted men desiring discharge on or before December 31.

(*d*) Number of temporary enlisted men who, without relinquishing their right to discharge, have expressed a desire to continue in service for a further period.

(*Cir. Letter No. 358, Surgeon General's Office, November 28, 1919.*)

Form 47, Medical Department.

All organizations and formations of the Medical Department that have heretofore rendered returns of the enlisted force on Form 47A, Medical Department, will, beginning November 30 and thereafter, render return on Form 47, Medical Department. Men who entered the service for the period of the emergency will be indicated by (x) before their names in the margin of the return.

(*Cir. Letter No. 349, Surgeon General's Office, November 18, 1919.*)

DIETITIANS.

Dietitians' Service.

1. A consideration of the duties and status of dietitians in a number of military hospitals indicates the necessity for a general statement defining rather exactly the dietitian's place and duties. It is realized that any such general statement will be subject to modification when applied to individual hospitals.

2. *Relation of dietitian to hospital staff.*—The dietitian is responsible, as far as her professional work is concerned, to the commanding officer of the hospital. As assistant to the mess officer she cooperates with him and the chief nurse. The chief nurse of the hospital will send in a separate efficiency report of dietitians monthly, basing this report not only on her own observations, but on those of the mess officer as well. Socially the status of dietitians should be that of nurses, and in matters of conduct she is under the authority of the chief nurse.

3. *Status.*—The dietitian is a civilian employee of the Medical Department. But to place a competent dietitian on the same basis with cooks and maids is an injustice to her and a disadvan-

tage to the hospital in which she is working. Dietitians designated as head dietitians receive an additional $5 per month. Dietitians performing the duties of head dietitian but not so designated should be recommended for such appointment.

4. *Duties.*—(*a*) *Of the head dietitian.*—Reports to the chief nurse, or ward surgeon, deficiencies of service found in wards in order that these may be corrected through proper channels. Reports deficiencies of preparation and service found in the mess hall and kitchen to the mess officer. Inspects serving of food in all the wards and has the responsibility of seeing that it is properly prepared. Supervises and assigns the work of her assistants. Is responsible for the planning of all patients' menus, but confers with mess officer concerning market conditions before approving menus.

(*b*) *Of the dietitians.*—Have immediate supervision of the preparation of food in the general patients' mess, sick officers' mess, and nurses' mess (if desired by commanding officer). They also have charge of the filling of the food carts. Have immediate supervision of general diet kitchen. Plan menus (these to be approved, however, before use by the head dietitian). Have direct responsibility for the preparation of diets and should be supplied with sufficient help to relieve them of the details of this preparation. Visit wards to confer with ward surgeons, nurses, and in suitable cases with patients regarding special diets.

5. *Equipment.*—The head dietitian should have an office provided with a desk, the office to be located in a quiet place, near the mess department or diet kitchen.

6. The worth of the dietitian to the hospital is largely determined by the degree to which cooperative relations are established. Conferences at regular intervals, in which the commanding officer meets with the head dietitian, chief nurse, and mess officer, are recommended.

(*Cir. Letter No. 131, Surgeon General's Office, March 8, 1919.*)

Dietitians' Uniforms.

1. Owing to the present policy of retrenchment of the War Department, it is not deemed wise to require the purchase of a uniform by dietitians in the Army. Many, however, have provided themselves with the uniform supplied by the Red Cross to dietitians going overseas. These are worn with no uniformity. It is therefore suggested that when the said outdoor uniform is used it be worn according to the inclosed specifications. It is also suggested that the dietitians supply themselves with the uniform, as it involves no financial loss, since the uniform can be worn after leaving the service. It is further recommended that a white indoor or service uniform, as herein described, be worn while on duty.

INFORMATION AND INSTRUCTION IN REGARD TO DIETITIANS' OUTDOOR UNIFORM.

The outdoor uniform consists of a dark gray Norfolk suit (worsted or similar material for cold weather, Panama cloth or other light-weight material for summer wear), same design as that of the nurses' suit; dark gray military overcoat; black velour hat for winter, black straw sailor hat for summer; gray or white waist.

The coat of the suit shall be kept buttoned at all times when worn, but need not be worn during the summer months. Overcoat shall be kept buttoned at all times. The two upper buttons, however, may be left unbuttoned if desired. The waist shall be buttoned close to the neck, except during the warm weather, when it may be worn open to the first button below the base of the neck. When worn buttoned about the neck, a black ribbon, the width of the collar, should be worn under the collar, covering the three buttons on collar of waist, the ribbon fastening invisibly in the back. A small plain bar pin, silver or gold, without jewels, may hold the collar in place. A white turnover collar and cuffs may be worn with gray waist. Black or gray gloves shall be worn with the uniform; black shoes and black hose shall be worn with the winter suit; black or white shoes, with hose to match, may be worn with the summer suit. No jewelry, flowers, furs, or ornaments of any kind shall be worn with the uniform. If additional protection is needed for the neck, a muffler or scarf of black, gray, or white may be worn. It should be placed around the neck, and cross over the chest with ends under the coat. If sweaters are needed for additional warmth, gray is advised. Also a dark gray cape, lined with blue, may be worn. The Red Cross will furnish this cape without cost to all dietitians enrolled in the Red Cross, application for which should be made to the director, bureau of dietitian service, American Red Cross, Washington.

INFORMATION AND INSTRUCTION IN REGARD TO DIETITIANS' INDOOR UNIFORM.

The indoor service uniform consists of a one-piece white dress, side opening, with rolled white collar and white cap. The dress is fastened with plain white detachable pearl buttons, 1 inch in diameter. The collar may be secured to the dress with plain bar pin, silver or gold, with jewels (or Red Cross dietitian badge). A plain white butcher's apron may be worn when needed. No jewelry or fancy combs shall be worn with the uniform. Rubber heels should be worn at all times when on duty. The above-named articles may be purchased as follows:

Summer suit, $22.50; winter suit, $36.00 (extra skirt, $12.50); military overcoat, $28.50. Weltman & Pollack Co., 35 West Thirty-third Street, New York City.

Straw sailor hat: black velour hat, $4.25 (sizes 7, 7½, 7⅜, 7⅝). Best & Co., Fifth Avenue at Thirty-fifth Street, New York City.

No. 4 white waist, $2.50; white silk waist, $6.50. John Forsythe & Sons, 3 West Forty-second Street, New York City.

Gray silk waist, $7.50. John Wanamaker Store, New York City.

(Waists may be made in any white or medium gray material, plain and not sheer, of cotton, flannel, or silk, using Butterick's pattern No. 9530.)

Dietitians' white uniform *No. 555*, $5; dietitians' collar, No. 444, 25 cents; dietitians' cap, No. 333, 25 cents. John Wanamaker Store, New York City.

(Dietitians' uniform may be made from Home Journal pattern No. 555.)

Prices subject to change without notice.

(*Cir. Letter No. 162, Surgeon General's Office, March 31, 1919.*)

RECONSTRUCTION AIDES.

Physical Reconstruction Personnel.

1. It has come to the attention of this office that requests for transfer of reconstruction aides were being made by head aides and others outside of this office.

2. The Division of Physical Reconstruction of this office has jurisdiction over the personnel of the educational service and reconstruction aides.

3. You are directed, when educational personnel or reconstruction aides are needed in the hospital, to make a requisition upon this office for that personnel.

4. All transfers of reconstruction aides, or other educational personnel, are to be made through this office, and not by personal communication with individuals desired to be added to the personnel of your hospital.

5. The return of wounded men and the opening of new reconstruction hospitals has been so rapid as to require a sudden increase in educational personnel. Transfers are being made from other branches of Army service wherever suitable men can be found, but this supply is not likely to prove sufficient. Men may be appointed as temporary curative workshop instructors or as reconstruction aides to serve as instructors in workshops or classrooms. It is desired to find at once all men suitable for such transfers or appointments.

6. If men in any of the three following classes are known who are qualified and willing to serve as instructors in educational service, report them immediately to this office, with name, rank, addresses, qualifications, and work for which they are best fitted:

(*a*) Men now in Army service, especially commissioned officers, who can be transferred to the educational service.

(*b*) Enlisted men who will be willing after discharge to accept appointments as reconstruction aides and serve as instructors in workshops.

(*c*) Well-qualified civilians who are willing to accept appointment as curative workshop instructors.

(*Cir. Letter No. 26, Surgeon General's Office, January 10, 1919.*)

Reconstruction Aides as Medical Social Workers.

Medical social workers have the status of reconstruction aides in occupational therapy, and are subject to the same rules and regulations.

Where an educational service exists, they should be subject to the chief of the educational service, as are all reconstruction aides in occupational therapy. Where an educational service does not exist, they should be subject to the chief of the medical or surgical service as directed by the commanding officer.

It is thought that reconstruction aides operating as medical social workers may be available:

1. In assisting to coordinate the various educational and related activities within the hospital so that they may serve a larger number of patients more efficiently.

2. By bringing to the attention of outside agencies, such as the home service of the Red Cross the Y. M. C. A., the Knights of Columbus, the Jewish Welfare Association, the Federal Board, etc., the cases of soldiers who are in need of the types of service which these agencies are prepared to render.

3. In assisting medical officers as desired to secure such personal and social data about the patient as will assist in accurate diagnosis.

4. In rendering such other services as may be assigned to them by you.

(*Cir. Letter No. 38, Surgeon General's Office, January 18, 1919.*)

Request for Assistants as Instructors in the Curative Workshop Schedule of Base Hospitals.

1. Extreme difficulty is met with in the attempt to secure a sufficient personnel of qualified enlisted men and noncommissioned officers to serve as instructors in wards, shops, and outdoor occupations in the application of curative work, applied in the treatment of disabled patients in the hospitals and for soldiers in the convalescent centers who may be greatly benefited by curative work as it may be utilized for them in the educational program centered in the base hospital.

2. It is requested that every means be taken to aid the Medical Department of the Army in securing qualified instructors in the curative work schedule in the camp. It is suggested that the camp personnel officer may be of great assistance in locating men in the demobilization units of the Engineers, the Signal Corps, the Quartermaster Corps, and other organizations.

3. Commissioned officers who desire to remain in the service and who consent to be transferred to the Medical Department, or without transfer, may be assigned to serve in an administrative capacity and as instructors in the application of the curative workshop schedule to disabled men. The name, rank, and organization should be submitted to this office, together with the approval of the assignment by the commanding officer.

4. Civilians who are qualified may be employed as reconstruction aides in occupational therapy at a salary of $50 per month, with quarters and subsistence, or $62.50 per month additional in lieu of quarters and subsistence. Names of individuals, with complete information as to their qualifications, who desire employment on this status, should be sent to this office, attention of the Division of Physical Reconstruction.

5. A limited number of civilians who are qualified may be employed at higher salaries than that paid to reconstruction aides. Recommendations for the employment of this class of civilians, with full information as to their qualifications, should be sent to this office, attention of the Division of Physical Reconstruction.

6. No men who are qualified as teachers in academic branches, in the application of curative work in the form of various handcrafts, and as social service workers may be appointed on the status of reconstruction aides. The names and qualifications of women who seek this form of employment should be sent to this office, attention of the Division of Physical Reconstruction. Upon the request of the commanding officers, women reconstruction aides, as far as available, will be assigned to duty at the base hospitals.

7. It is not improbable that there will be found in the camp more qualified men for the services indicated than may be needed in the educational work of your hospital. The surplus of qualified men who may be found may be needed elsewhere. It is requested that the names, the qualifications, and the terms under which they may be obtained be sent to this office. Men are needed as instructors in the following lines of work, which are applied in the curative workshop schedule: Ordinary school work, agriculture, market gardening, carpenters, cabinetmakers, motor mechanics, patent makers, gas engines, shorthand, typewriting, stenotyping, drafting, telegraphy, printers, shoe repairers, mechanical engineers, machinists, electricians, leather workers, sign painters, physical education and recreation, vocational advisors.

(*Cir. Letter No. 72, Surgeon General's Office, February 4, 1919.*)

Duties of Reconstruction Aides.

1. The chief educational officer, your hospital, is requested to forward immediately to the Division of Physical Reconstruction, Surgeon General's Office, the names of reconstruction aides, whose duties are entirely either clerical or stenographic.

2. It is the intention of this office that all persons employed as commercial reconstruction aides are to devote half of their time to teaching. If they are not devoting at least half of their time to teaching, it is requested that this office be so informed.

3. The Division of Physical Reconstruction has been informed that it is possible at the present time to replace all reconstruction aides acting in a clerical capacity on educational work with civilian employees of the Medical Department at large, thus releasing the reconstruction aides for duties for which they were originally appointed; i. e., giving instruction to disabled soldiers.

4. It is requested that you inform this office how many civilian employees, Medical Department at large, are needed to replace reconstruction aides now doing only clerical work.

(*Cir. Letter No. 152, Surgeon General's Office, March 24, 1919.*)

Personnel, Division of Physical Reconstruction.

1. It is requested that you inform this office immediately as to the following:

(*a*) Number of additional personnel needed and their necessary qualifications.

(*b*) Submit name, rank, organization, corps, and qualifications of personnel no longer needed by your hospital but who in your opinion are efficient and warrant transfer to another hospital.

(*c*) Submit name, rank, organization, corps of personnel no longer needed by your hospital and who in your opinion are inefficient and incompetent. Give reason for inefficiency of each.

2. The above information is desired concerning commissioned officers, noncommissioned and enlisted men, reconstruction aides in occupational therapy and physiotherapy, and curative workshop instructors.

(*Cir. Letter No. 191, Surgeon General's Office, May 1, 1919.*)

Report of Expenditures from Educational Officer's Red Cross Emergency Fund.

1. Circular Letter No. 80 requires that monthly reports be made of all expenditures from this fund.

2. Some hospitals using this fund have neglected to make reports promptly. All reports that are delinquent must be sent in at once. Further continuance of the fund may be made dependent upon such reporting.

3. The fund was established to meet the emergency which was acute at the time, owing to the rapid enlargement of the work and the establishment of educational service in many of the base hospitals.

4. Some factors in this emergency no longer exist. Educational officers will use discretion in the uses made of this fund. Be more exact and explicit in stating the emergency in each expenditure.

5. Educational officers in making May reports will state whether in their opinion emergencies still exist which make advisable the continuance of the fund.

(*Cir. Letter No. 216, Surgeon General's Office, May 20, 1919.*)

Discharge of Reconstruction Aides, Medical Department at Large.

1. Upon receipt of orders for the discharge of reconstruction aides, Medical Department at large, the following instructions will govern:

(*a*) Deliver to the reconstruction aide his or her letter of appointment, indorsing thereon date last paid, amount of accrued leave, and date of leaving hospital. Final pay voucher will be prepared in this office.

(*b*) Deliver to the reconstruction aide a copy of the form inclosed to be used in reporting to the Surgeon General the date of arrival home.

(*c*) All reconstruction aides will be furnished by you with Form 350A, public voucher, reimbursement of traveling expenses.

(*d*) If reconstruction aides under orders for discharge have not been furnished quarters and rations at your hospital, they will be furnished a letter to that effect and instructed to forward same to this office, accompanied by their letter of appointment.

2. In the future the customary letter of transmittal embodying the instructions given above will be omitted in forwarding orders from this office directing discharge, transfer, or assignment of reconstruction aides.

(*Cir. Letter No. 236, Surgeon General's Office, June 16, 1919.*)

Surplus Educational Personnel.

1. With the discontinuance of educational service in the base hospitals, personnel will be available for transfer. Circular Letter No. 230 elicited information regarding the dates desired for release and rating of efficiency of all persons engaged in educational service. In accordance with the replies to this letter, qualified persons, with good rating, who are willing to remain in the service will be retained and transferred to other hospitals.

2. A large number of such persons are now available. This excess educational personnel will be distributed among the hospitals, still continuing, without waiting for request from the hospitals. In some cases this will result in a temporary surplus of educational personnel.

3. It is desired that hospitals make arrangements to ascertain the fitness of such personnel by actual trial. To reduce surplus, select the least desirable of the staff and recommend the same for discharge. The people who will be sent to your hospital will all be experienced instructors, with good rating. It is hoped that, by this process of concentration and elimination, the best may be retained.

4. This distribution of surplus personnel must not be construed as approval of any permanent increase of personnel above that actually necessary for the efficient and economical operation of the educational service, nor must educational personnel be diverted to other branches of hospital service. Detailed efficiency reports of individual assignments and working hours will be required on and after July 1, in order to insure economical operation.

(*Cir. Letter No. 240, Surgeon General's Office, June 18, 1919.*)

Reconstruction Aides in Physiotherapy.

1. Under separate cover there are being sent to your hospital copies of the attached questionnaire.

2. It is requested that all reconstruction aides in physiotherapy fill out this blank in duplicate and return it to the Surgeon General's Office, attention of the Division of Physical Reconstruction, Physiotherapeutic Section.

Date..

Name.. Age.................................

Present station..

Permanent address..

Preliminary education..

Preparatory or high school..

College degrees..

Professional schools..

Special courses...

Military assignments..

What date do you desire to leave the military service? ....

Have you a permanent position after your discharge? ....

Do you desire a position after discharge? ....

If so, in what section of the United States? ....

Ratings.[1]	Quality of work.	General conduct.	General health.	Class.
....	....	....	....	....

[1] The classification should be indicated by "excellent," "very good," "good," "fair," "poor." Ratings should be indicated by 1, 2, 3, or 4, 1 and 2 being "satisfactory;" 3, "recommended for discharge when their services can be spared;" 4, "recommended for immediate discharge."

....

Director of Physiotherapy.

Noted.

....

Commanding Officer.

(*Cir. Letter No. 197, Surgeon General's Office, May 3, 1919.*)

Reporting Changes in Station of Reconstruction Aides.

1. A great deal of confusion, unnecessary correspondence, and a considerable waste of time results in this office failing to receive prompt reports of changes in station of reconstruction aides, laboratory technicians, student nurses, etc.

2. Upon the departure of a civilian employee for another station, the date of departure and the last date for which the employee receives pay at that station will be promptly reported to this office, attention chief clerk.

3. Upon the arrival of a civilian employee at a new station for duty, the date of arrival and the first date for which the employee will receive pay at the new station will likewise be reported to this office, attention chief clerk, at the earliest practicable date.

4. It is necessary to transfer funds for the payment of civilian employees when changing from one station to another. This can not properly be handled unless advice as to the date of departure and of arrival and the information regarding pay status are reported promptly and correctly.

(*Cir. Letter No. 275, Surgeon General's Office, August 5, 1919.*)

Appointment of Reconstruction Aides in Occupational Therapy.

1. Urgent need still continues for the services of women trained in occupational therapy. This need includes not only teachers of crafts but also of academic and commercial subjects.

2. It is requested that the chief of the educational service make public announcement that a limited number of appointments are to be made and request the aides and others conversant with the nature of the work to suggest to qualified women among their acquaintance that they make application.

3. Inclosed are sample sheets of the blanks which are sent to applicants.

...., 191..

To the Surgeon General, U. S. Army, Washington, D. C.

SIR: I hereby apply for appointment as a reconstruction aide for occupational therapy, subject to the prescribed examinations. I certify that to the best of my knowledge and belief, I am not afflicted with any form of disease or disability which will interfere with the performance of the duties of aide, and that the answers given to the interrogatories are true and correct in every respect.

Very respectfully,

....

Present post-office address..

INTERROGATORIES.

1. Name in full..
2. Date of birth.................................... Present age....................
3. Where born.................... (City.) .... (County.) .... (State.) .... (Foreign country.)
4. If not a citizen of the United States by birth, where and when were you naturalized? ......
   ....
5. Permanent residence..
6. Single........................ Married.................. Widow....................
7. If married, is your husband in the military or naval service of the United States? At home? .... Abroad? ....
8. General education:

	Name.	Address.	Number of years.
High school......	....	....	....
College...........	....	....	....

9. Special training in arts and crafts:
   School.................... Time spent.................... Courses completed.....
   ....
10. Special training in academic subjects:
    School.................... Time spent.................... Courses completed.....
    ....
11. Special training in commercial subjects:
    School.................... Time spent.................... Courses completed.....
    ....
12. Courses in hospital teaching? ....
    Experience in hospital teaching? ....
13. Check *once* each of the following in which you have some skill or special aptitude. Check *twice* those in which you are expert.

Class A.—Social work, medical social work, library service, teacher of adolescents or adults in industrial and fine arts, general science, English, commercial branches as penmanship, stenotypy

bookkeeping, stenography, typewriting, free-hand drawing and design, mechanical drawing, telegraphy, and signaling, radio operating, Spanish, French, manual training, agriculture (gardening and floriculture), music, plays and games, mathematics (commercial and industrial).
Add any other subjects here..

Class B.—Teacher or craftsman in knitting (hand, machine, rake); weaving (textile production and manufacture); clay and papier-mâché modeling (clay and glass production and manufacture); wood carving and toy making (wood production and manufacture); metal working; jewelry and engraving (metal production and manufacture); reed, cane, and fiber; drawing, lettering, and design; leather tooling, etc.

14. What teaching experience have you had not indicated above? ....
....
15. What three subjects do you consider yourself best qualified to teach? ....
....
16. Give the names and addresses of four persons who can testify intelligently about your qualifications for service as a reconstruction aide for occupational therapy in a military hospital.
....
....
....
....
17. Do you agree to serve during the present emergency if appointed as a reconstruction aide in occupational therapy? ....
18. Are you a member of the American Red Cross, Army or Navy unit? ....
"Unit" means a definite organization in the Army or naval service. If you are, do not apply, as it will tend to cause confusion and duplication of work.
19. What language other than English do you speak? ....
20. Are you willing to go wherever needed within the territorial limits of the United States?
....
21. When will you be available for service? ....
....
22. Give name and permanent address of nearest relative. ....
....
23. Where are you now employed? ....

REPORT OF PHYSICAL EXAMINATION OF RECONSTRUCTION AIDES.

Name..
Place.. Date.................................191..
1. Figure and general appearance..
2. Height, without shoes........................inches. 3. Weight, less estimated weight of clothing....................pounds. Age...................... Apparent age..........
4. Vision {Right eye (Snellen), ...; corrected to..............; lens used..........
Left eye (Snellen), ...; corrected to..............; lens used..........
5. Color perception...
6. Hearing: Right ear..............................; left ear...............................
7. Condition of teeth..
8. Condition of feet...
9. Skin...
10. Hands: Thin..............; fat..............; long fingers..........; short fingers..........
11. Evidence of lameness...
12. Are both arms and shoulders normal? ....
13. Is posture good? ....
14. Chest and contained organs:
Girth: Expiration......................inches; inspiration......................inches.
Respiration, rate of...................heart; pulse rate..................................
15. Abdomen and contained organs...
16. Urine examination:
Color.................................... Reaction..........................
Specific gravity.......................... Albumen...........................
Casts.................................... Leucocytes........................
Sugar.................................... ....
17. Is there evidence of constitutional or hereditary disease? ....
18. Remarks on fitness for:
(*a*) General Army service...
....
General remarks (opinion requested as to suitability of applicant both as regards physical condition and personality)..

I certify that the foregoing is a correct exhibit of the physical condition of the applicant named above as found by me on the examination indicated.

....M. D.,
....

Place......................................

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, August 15, 1919.

RECONSTRUCTION AIDES IN OCCUPATIONAL THERAPY.

The urgent need for trained women as teachers in occupational therapy in military hospitals still continues. Since there will probably be few new appointments after October 1, any women who may wish to apply are urged to do so at once and to be ready for immediate service. The members of this force are called reconstruction aides. Their duties are to teach hand crafts and academic and commercial subjects to disabled soldiers in military hospitals.

Every effort is made to choose for this service women of unusual strength of character. They should be able to do hard and serious work, to spend long hours when occasion demands, to forego many of the luxuries and comforts of normal home life, properly to subordinate their personal interests to the good of the service, and to cooperate with medical officers, nurses, and others in the conduct of their work.

The personal qualifications of reconstruction aides are in the main those of good teachers—knowledge and skill in the particular occupation to be taught, attractive and forceful personality, teaching ability, sympathy, tact, judgment, industry. A reconstruction aide needs to use great ingenuity and cleverness in adapting her work to the conditions prevailing in the military hospitals.

Qualifications.—Age and civil status.—Reconstruction aides must be between 25 and 45 years of age. Only in the case of women with unusual qualifications will an exception be made to this rule.

They must be citizens of the United States. They must furnish at least two references as to character and such further certificates as to professional ability as may be requested by the Surgeon General.

Physical.—Applicants for appointment as reconstruction aides are required to pass a careful physical examination made by some medical officer of the Army or by an authorized civilian practitioner. Applicants must not be less than 60 inches or more then 70 inches in height; must weigh not less than 100 or more than 196 pounds. Marked disproportion between height and weight may be a cause for rejection. The medical examiner sends his report direct to the Surgeon General and its contents are considered confidential.

Educational.—Applicants must have thorough general education, at least the equivalent of graduation from secondary school. Normal school and college graduates and those with comparable technical training are preferred. In all appointments and promotions preference is given to applicants showing superior qualifications.

Each aide is expected, after her appointment, to become familiar with military procedure in the hospitals and informed on all provisions made by the Federal Government for the rehabilitation of disabled soldiers, as enumerated below:

Military procedure in hospitals.
War Department's program for physical reconstruction of disabled soldiers.
Regulations as to insurance, pensions, etc., under War Risk Insurance Bureau.
Opportunities offered by Federal Board for Vocational Training.

Classification of aides.—Aides are divided into two classes—aides and head aides. There is 1 head aide for every 10 aides. The head aide directs and is responsible for the work of the aides under her. Where there are fewer than 10 aides assigned to a hospital there is 1 head aide. Head aides are continued as such as long as they satisfactorily fill the position. A head aide may be reduced to aide by the authority of the Surgeon General.

Assignment of aides.—Aides are assigned to any hospital in the United States where in the opinion of the Surgeon General they will be most useful.

Pay of aides.—The pay of aides while serving in the United States is $50 per month. A head aide receives $15 per month additional. All aides receive quarters and rations in the hospital to which they are assigned, and uniforms soiled while on duty are laundered as a part of the hospital laundry. Where quarters and rations are not furnished, aides receive additional pay at the rate of $62. 50 per month. After one month of successful hospital experience, an aide and head aide each receive a bonus of $20 per month upon recommendation of the commanding officer.

Transportation of aides.—All aides and head aides receive transportation to point of destination and $4 per day in lieu of other traveling expenses. Upon discharge from service they receive transportation to the point from which they were appointed and $4 per day in lieu of other traveling expenses.

Duration of service.—All aides and head aides are appointed to serve during the present emergency, which means for such time as the Surgeon General feels their services are necessary. Resignation is allowed for adequate reason.

Hours of service.—The working day usually is eight hours, but it may be longer when necessary. Suitable time is given for the noon-day meal, and such further time off duty as the work will permit.

Leaves of absence and sickness.—Aides are civilian employees of the Medical Department and may receive annual leaves of absence with pay not to exceed 30 days in any calendar year when to grant such leave will not cause embarrassment in the conduct of the service. Pay also will be allowed for personal illness, not to exceed 30 days in any one calendar year. Leaves of absence at the rate of two and one-half days for each month of service may be granted to employees who have been in the service of the Government less than one year. While on leave, aides receive only base pay, regardless of status while on duty.

(*Cir. Letter No. 291, Surgeon General's Office, August 25, 1919.*)

LABORATORY TECHNICIANS.

Women Bacteriologists and Pathologists.

1. It is necessary to substitute women for medical officers in the laboratories of as many hospitals in this country as is possible. Submit statement showing number of women bacteriologists and pathologists you can accommodate for duty at your hospital.

(*Cir. Letter, Surgeon General's Office, March 16, 1918.*)

Uniform of Women Laboratory Technicians.

1. Laboratory technicians in the service of the Medical Department of the United States are not required to wear a uniform. Uniforms and equipments similar to those used by certain other civilian employees may, however, be obtained (at cost) through the Red Cross by sending to the representative of nursing of the Red Cross, 44 East Thirty-third Street, New York City. The authorization slip may be obtained from the chief of laboratory at the technicians' station or from this office. This slip should be accompanied by a statement of measurements (bust, waist, skirt, length, size).

2. The following articles constitute the equipment:

One Norfolk suit (gray); approximate price, $40.
One black velour hat.
One black straw hat.
Two shirtwaists, white—wash.
One flannel or silk waist (gray).
One ulster.
(No cape.)

No insignia similar to those worn by any branch of the military service are to be worn.

FORM FOR AUTHORIZATION SLIP.

Miss .... is a laboratory technician on duty at this station.

Name..
Rank..

(*Cir. Letter, Surgeon General's Office. Undated.*)

CIVILIAN EMPLOYEES AT LARGE.

Employment of Discharged Soldiers.

1. Your attention is invited to the attached communication from the United States Civil Service Commission, Washington, D. C.; also to Circular No. 4, War Department, Washington, January 3, 1919.

2. It is desired that you give the fullest cooperation in this work and render every possible assistance to the representatives of the Civil Service Commission.

UNITED STATES CIVIL SERVICE COMMISSION,
Washington, D. C., March 18, 1919.

Maj. Gen. M. W. IRELAND,
Surgeon General, U. S. A., Washington, D. C.

SIR: The commission incloses herewith a copy of War Department Circular No. 4, dated January 3, 1919, and a copy of a letter addressed to the commission by The Adjutant General of the Army on January 4, 1919, relative to the matter of the appointment of representatives of this commission at military establishments in the United States for the purpose of giving information concerning opportunities for employment in the Federal civil service to soldiers who are about to be discharged.

The commission has this work well organized except in Army hospitals. It has postponed action in the case of hospitals in the expectation that there would be legislative provision which would permit some degree of release from the civil-service regulations as to physical requirements in favor of men who were injured in the service. Such a measure having failed of definite consideration before the adjournment of Congress, the commission desires to proceed in the matter and to appoint its representatives at Army hospitals to inform the men as to the facts relating to civil-service employment.

The commission requests that you communicate with the commanding officer of each of the following-named general hospitals and instruct him to cooperate with the commission in this work:

Army and Navy General Hospital, Hot Springs, Ark.
Letterman General Hospital, San Francisco, Calif.
Walter Reed General Hospital, Takoma Park, D. C.
General Hospital No. 1, Williamsbridge, N. Y.
General Hospital No. 2, Fort McHenry, Md.
General Hospital No. 3, Colonia, N. J.
General Hospital No. 5, Fort Ontario, N. Y.
General Hospital No. 6, Fort McPherson, Ga.
General Hospital No. 9, Lakewood, N. J.
General Hospital No. 10, Boston, Mass.
General Hospital No. 11, Cape May, N. J.
General Hospital No. 12, Biltmore, N. C.
General Hospital No. 14, Fort Oglethorpe, Ga.
General Hospital No. 15, Corpus Christi, Tex.
General Hospital No. 22, Philadelphia, Pa.
General Hospital No. 23, Hot Springs, N. C.
General Hospital No. 24, Park View, Pa.
General Hospital No. 26, Fort Des Moines, Iowa.
General Hospital No. 27, Fort Douglas, Utah.
General Hospital No. 28, Fort Sheridan, Ill.
General Hospital No. 29, Fort Snelling, Minn.
General Hospital No. 31, Carlisle, Pa.
General Hospital No. 32, Chicago, Ill.
General Hospital No. 33, Fort Logan H. Roots, Ark.
General Hospital No. 35, West Baden, Ind.
General Hospital No. 36, Detroit, Mich.
General Hospital No. 37, Madison Barracks, N. Y.
General Hospital No. 38, East View, N. Y.
General Hospital No. 39, Long Beach, L. I., N. Y.
General Hospital No. 40, St. Louis, Mo.
United States Army convalescent hospital, Lawrenceville, N. J.

At the camps throughout the country in which base hospitals are located the commission has already appointed camp representatives. In most cases the work has been intrusted to secretaries of the Y. M. C. A. or other such organization already on the ground; in some instances officers of the Army have been designated. It is the purpose of the commission to communicate with its representative at each camp to ascertain whether or not it will be necessary to appoint a separate representative at the base hospital. As soon as practicable the commission will inform you concerning the matter of representation at base hospitals.

The commission's appropriation does not permit it to send to establishments of the Army representatives who are carried on its own rolls. In the case of general hospitals it is the commission's plan to communicate with or have one of its traveling representatives call upon the commanding officer at each such hospital and ask him to suggest some persons permanently located at the hospital to undertake the work of representing the commission. The commission will fully instruct each representative so selected and will keep him currently advised as to changes and new positions open.

If the issuance of instructions to commanding officers at Army hospitals can be expedited, the commission will appreciate it, for it realizes that the extension of the organization to hospitals has been somewhat delayed. The commission requests to be advised as to the date of the instructions issued.

By direction of the commission:

Very respectfully,

(Signed) MARTIN A. MORRISON,
President.

WAR DEPARTMENT,
THE ADJUTANT GENERAL'S OFFICE,
Washington, January 4, 1919.

In reply refer to 230.224 Pub. Div.

PRESIDENT, CIVIL SERVICE COMMISSION,
Washington, D. C.

In reply to your letter of December 13, relative to positions in the Federal classified civil service for discharged officers and men, inclosed herewith is a copy of Circular No. 4, War Department, 1919, with reference to this matter.

The War Department is pleased to approve of the plan of the Civil Service Commission to appoint representatives at the demobilization centers, provided such representatives comply with the conditions as set forth in the circular to camp commanders with reference to duties of such representatives at the demobilization camps.

The War Department requests that where representatives are appointed by the Civil Service Commission at any camp, post, or station at which men are being discharged, that the Civil Service Commission give such representatives letters of identification to the camp commanders concerned and issue instructions to their representatives which will insure that such representative carry out, as far as it refers to such representatives, the spirit of instructions sent to the camp, post, or station commanders in reference to the matter of civil service representatives at the demobilization camps.

(Signed) P. C. HARRIS,
The Adjutant General.

[Circular No. 4.]

WAR DEPARTMENT,
Washington, January 3, 1919.

REPRESENTATIVES OF THE CIVIL SERVICE COMMISSION TO REPORT TO CAMP COMMANDERS AT DEMOBILIZATION CENTERS.

1. Commanding officers of all camps, posts, and stations where men are to be discharged will give thorough publicity to the fact that some positions are now open in the Federal classified civil service to discharged officers and soldiers.

2. The War Department has approved the request of the Civil Service Commission that it be allowed to appoint representatives at the 30 demobilization camps and three demobilization stations and at such other Army camps, posts, and stations as the Civil Service Commission may consider desirable.

3. These representatives will present letters of identification from the Civil Service Commission to the commanding officers concerned. The functions of such representatives will be only to inform the commanding officers as to the opportunities for employment that are open in the Federal classified civil service to officers and soldiers upon discharge, and such representatives should not be allowed to deal directly with the men concerned. The commanding officer will give out the information furnished by the Civil Service Commission representatives to the officers and men to be discharged in such a way as to afford those concerned ample information as to the opportunities for employment in the Federal classified civil service.

4. In such camps, posts, and stations at which there are no authorized representatives of the Civil Service Commission actually present, the commanding officers will give publicity to the fact that information with reference to the civil-service positions may be obtained by calling upon the secretary of the local board of civil-service examiners at the post office or customhouse in any of the 3,000 cities of the United States, or by communicating directly with the United States Civil Service Commission, Washington, D. C.

(230. 224, A. G. O.)

By order of the Secretary of War:

PEYTON C. MARCH,
General, Chief of Staff.

Official:
P. C. HARRIS,
The Adjutant General.

(*Cir. Letter No. 145, Surgeon General's Office, March 20, 1919.*)

Retrenchment During the Fiscal Year 1920.

1. The following is furnished for your information and guidance:

(*a*) The cost of maintaining the civilian personnel of the Medical Department at large in their present positions is approximately $8,000,000 per annum.

(*b*) One million two hundred and thirty thousand dollars has been included in the estimates submitted to Congress for the hire of civilian personnel for the fiscal year ending July 1, 1920.

(*c*) On this basis it will be necessary to reduce by practically seven-eighths the cost of the civilian pay roll of your department during the fiscal year beginning July 1 next, to enable the retrenchment necessary to accommodate the decreased estimates.

2. Up to the present time Congress has not appropriated the amount of money estimated for the employment of civilian personnel of the Medical Department at Large, and it is barely possible that the estimates of this department may be reduced somewhat.

3. Until Congress enacts legislation permitting voluntary enlistments to replace soldiers detailed on clerical and other work, and who desire discharge, it is realized that in many cases the vacancies created by discharge will have to be filled by the employment of civilians. It is intended, however, that wherever possible such positions at your post will be filled by enlisted men. The need for retrenchment in the near future must be borne in mind in making requests for authority to employ civilian help, such requests to be regulated by the exigencies of the service and the amount of money to be available after July 1 of this year.

4. Where authority is granted to employ civilians for a stated period (usually 60 days), and it is later found that, consistent with good administration, positions so authorized can be vacated before the life of the employment has expired, steps will be taken to relieve the Medical Department of this expense by making appropriate recommendation to this office. An employment in no case should be continued beyond a period not justified by the needs of the service, irrespective of the fact that the life of the authority is for a longer period.

5. This office is not unmindful of the ever-increasing cost of living, and is willing to look with favor upon recommendations for promotions as a reward in meritorious cases where long and faithful service is involved. Nevertheless, the number of recommendations or concurrence in recommendations from this office to the Secretary of War must be reduced to a minimum, having in mind the reduced estimates and the fact that the Secretary of War is favorably considering requests for increased compensation only in exceptional cases. Therefore a closer cooperation between headquarters in the field and this office in the matter of reducing expenses is paramount, if the retrenchment required is to be made and an economical administration maintained in the field during the fiscal year ending July 1, 1920.

6. It is requested that immediate steps be taken looking to a reduction of the present civilian personnel under your jurisdiction, and that every effort be made to insure operation at reduced figures consistent with a prompt dispatch of the public business.

(*Cir. Letter No. 146, Surgeon General's Office, March 20, 1919.*)

Employments, Temporary or Probational.

1. Considerable unnecessary correspondence is entailed in this office in returning to medical officers in the field correspondence reporting employments in order to ascertain whether the employments are temporary or probational, i. e., whether the employee is secured through civil service or under the provisions of paragraph 104, M. M. D., 1916. This information must be shown in every case.

2. Where an employment is made without reference to the civil service as authorized by paragraph 104, M. M. D., 1916, the papers reporting the employment should not be sent through the district secretary of the civil service, but forwarded direct to this office in order to avoid complications.

3. Where an employment is made through civil service, the papers reporting employment in every instance must be forwarded to the Surgeon General through the district secretary in which the position is located.

4. The report should be accompanied by oath of office prescribed by section 1757 of the Revised Statutes of the United States and civil-service certificate.

(*Cir. Letter No. 168, Surgeon General's Office, April 4, 1919.*)

Report of Civilian Personnel.

1. Supplementing Circular Letter No. 146, this office, dated March 20, 1919, relating to the retrenchment which the Surgeon General is required to make during the fiscal year 1920, and which is made necessary by the reduced estimates submitted to Congress for the employment of civilian employees of the Medical Department at Large, you are requested to furnish this office, as soon after May 1 as can be found practicable, a list showing the name, designation, whether appointment is temporary or probational, salary or rate of pay, and authorization number of each civilian employee on duty under your jurisdiction on May 1, 1919. By "civilian employee" is meant all classes of instructors employed in connection with the reconstruction work, curative workshop instructors reconstruction aides of all grades, student nurses, laboratory technicians, and the usual clerical personnel, cooks, laborers, maids, etc., on duty in the Medical Department.

2. This added work is made necessary because of the failure of responsible medical officers to report in every instance changes in the civilian personnel under their jurisdiction, as required by paragraphs 118 and 119, M. M. D., 1916. These reports are to be used as a check against the records of this office, to permit a determination as to just what extent it will be necessary to make reductions throughout the Medical Department, and to insure keeping the expenses of the department within the limits of the moneys appropriated.

3. The list furnished should include, with appropriate remarks, the names, designations, and rates of pay of employees under orders to report at new stations, who, because of the time elapsing between their departure and the rendering of the report, there is reason to believe have not arrived at their new stations on May 1.

4. Department surgeons will see that these instructions are complied with by all commanding officers of hospitals on duty at posts, stations, or units within the territorial department under their jurisdiction.

5. Your prompt attention to this request, as soon after May 1 as practicable, is desired.

6. It is also requested that until further notice a report be furnished this office showing the civilian employees on duty on the 1st of each month. This report should contain the information outlined in above letter, and be in this office not later than the 10th of the same month.

(*Cir. Letter No. 177, Surgeon General's Office, April 15, 1919.*)

Increase of Compensation.

1. Section VII of the legislative, executive, and judicial appropriation act approved March 1, 1919, provides that civilian employees of the United States who receive a total compensation at the rate of $2,500 per annum or less shall in certain cases receive during the fiscal year 1920 additional compensation at the rate of $240 per annum. The following exceptions are prescribed by the law:

(*a*) No employee shall receive additional compensation under this section at a rate which is more than 60 per cent of the rate of the total annual compensation received by such employee.

(*b*) Where an employee in the service on June 30, 1918, has received during the fiscal year 1919, or shall receive during the fiscal year 1920, an increase of salary at a rate in excess of $200 per annum, or where an employee, whether previously in the service or not, has entered the service since June 30, 1918, whether such employee has received an increase in salary or not, such employee shall be granted increased compensation only when and upon the certification of the head of the department or establishment employing such persons of the ability and qualifications personal to such employees as would justify such increased compensation.

(*c*) That the provision for additional pay shall not apply to employees paid from lump-sum appropriations in bureaus, divisions, commissions, or any other governmental agencies or employments created by law since January 1, 1916, or to employees provided with special allowances because of service in foreign countries.

2. An employee of the Medical Department who received the $120 increase of compensation during the fiscal year 1919 will be allowed the $240 increase for the fiscal year 1920 without further action, unless within the purview of paragraph 1*b* above.

3. The following decision regarding the employees indicated in 1*b* has been announced bv the Secretary of War:

> It is evident that Congress did not anticipate that all persons of the two classes of employees referred to in this proviso would be entitled to the increased compensation. The statute required that the increase shall be given to such employees only when and upon the certification of the head of the department of the ability and qualifications personal to such employees as would justify the increased compensation. It is well, therefore, to bear in mind that as to employees belonging to these two classes the increased compensation is not a bonus but is to be regarded as in the nature of a promotion on merit, and bureau chiefs should be governed accordingly in making their recommendations. In determining the eligibility of such persons to receive the increase, their existing rates of compensation should be considered in relation to the classes of work performed, due regard being had for recent general increases in rates of pay, and also, on the other hand, due regard being had for the fact that in a large majority of cases under the War Department the base rates of pay have already been materially advanced. In making recommendations for the $240 increase, the general principles stated above will be observed. No employee receiving a salary in excess of $1,000 per annum will be considered as having sufficiently demonstrated his or her ability and qualifications justifying the increased compensation provided by this law until such person shall have been in the Government service six months.

4. Recommendations for the $240 increase will be made in sufficient time to reach this office not later than the 10th of the month in which the employee will have completed six months' service, the increase of compensation to be effective on the 1st day of the ensuing month.

5. Increase will not be certified by this office for any of the employees mentioned below, but they will be continued on pay status on the terms of their original contracts or appointments: Contract nurses, directors, assistant directors, instructors, and student nurses, Army School of Nursing; hospital assistants; reconstruction aides of all classes; teachers and instructors in reconstruction work; dietitians, anæsthetists, registrars, photographers; bacteriologists, laboratory assistants, and laboratory technicians of all classes.

(*Cir. Letter No. 244, Surgeon General's Office, June 23, 1919.*)

Monthly Report of Civilian Personnel, Medical Department.

1. The report called for in S. G. O. Circular Letter No. 177, dated April 15, 1919, will be discontinued, and beginning August 1, 1919, monthly report of employees serving under your jurisdiction will be submitted to this office, showing the data as required on the accompanying sample.

2. In the column "Salary" will be shown the rate of base pay only, reduced to a monthly basis.

3. In the column "Total" will be shown the full amount of money actually received for the month reported on, exclusive of the bonus allowed from the "increase of compensation" fund.

4. The actual amount of money paid an employee in lieu of rations and lodgings will be shown in the column therefor.

5. Employees of the same designation will be grouped together in the report to permit ready calculation of the total amount of money expended for any grade of employment.

6. An authorization number is assigned to every employment authorized by this office. This authorization number continues the same during the employment of the original appointee. In filling a vacancy, the authorization number in the case of the successor or successors is indicated by the addition of "-a," "-b," etc. If the authorization number of any employee serving under your jurisdiction is not of record, immediate steps will be taken to secure same by communication with this office.

7. The term "authorization number" should not be confused with the term "allotment number." For each allotment of funds, monthly or quarterly, as the case may be, an allotment number is furnished to identify the accounts for services paid from such funds.

8. No civilian is to be paid from the funds allotted by the Surgeon General for the pay of employees unless employment at the cost of such funds is expressly authorized by this office.

(*Cir. Letter No. 258, Surgeon General's Office, July 16, 1919.*)

Travel Orders.

1. The Secretary of War on April 7, 1917, authorized the Surgeon General to issue travel orders to employees in the field service of the Medical Department. The Judge Advocate General holds that the Surgeon General is not empowered to delegate to others the authority so conferred.

2. This office on numerous occasions has received from civilians directed to perform certain travel, copies of orders accompanying vouchers for reimbursement of traveling expenses which revoke in full or amend in part orders issued by the Surgeon General. The instructions of this office conveyed by Circular Letter No. 204, dated May 17, 1919, apparently have been interpreted to delegate to commanding officers of medical units authority to modify or amend travel orders issued from this office. That interpretation can not be maintained.

3. Medical officers who have any doubt as to the proper wording of travel orders issued from this office for civilian employees will submit the same hither for decision.

(*Cir. Letter No. 277, Surgeon General's Office, August 7, 1919.*)

Increase of Compensation.

1. Referring to paragraph 5, Circular Letter No. 244, June 23, 1919, the provisions thereof will no longer apply to the following classes of employees whose pay does not exceed $75 per month and who have had one month of service:

(*a*) Army School of Nursing: Directors, assistant directors, and instructors.
(*b*) Reconstruction aides and head reconstruction aides.
(*c*) Dietitians.
(*d*) Anæsthetists.
(*e*) Registrars.
(*f*) Bacteriologists and laboratory technicians (exclusive of apprentice technicians).

2. Officers under whom the said employees are serving may, in meritorious cases, as ascertained by at least a month's service, recommend increase of compensation for them under the general rules applicable.

(*Cir. Letter No. 279, Surgeon General's Office, August 11, 1919.*)

Increase of Compensation.

1. Some misapprehension exists as to the force of paragraph 2, Circular Letter No. 279, August 11, 1919. That paragraph operates a modification of paragraph 5, Circular Letter No. 244, June 23, 1919, and indicates the policy of this office to recommend increases of compensation for employees of the classes concerned who are of demonstrated competency, as proved during at least one month's service. It is not expected to restrict the increases to those only who show exceptional or extraordinary merit. In other words, the one month's service is in a sense a probationary term, and if the same is satisfactory promotion should then be recommended as a matter of routine.

2. The recommendation in each of these cases will be submitted as soon after the completion of the probationary term as practicable, with a view to making the increase effective from the first day of the following month.

(*Cir. Letter No. 288, Surgeon General's Office, August 22, 1919.*)

Monthly Report of Civilian Employees, Medical Department.

1. Under the present system of disbursements the Surgeon General does not have access to pay rolls and vouchers covering the pay of civilian employees of the Medical Department. It is vitally necessary that every disbursement for this purpose made from the appropriation Medical and Hospital Department, 1920, be a matter of detailed record in this office. To accomplish this the monthly report required by Circular Letter No. 258 was inaugurated.

2. The instructions contained in that circular letter apparently are not understood. The report called for must embody all transactions involving original appointments, appointments to fill vacancies, separations from the service, changes in designation, rates of pay or salary, leaves of absence without pay, transfers from one station to another, etc., with appropriate remarks in explanation of each. All Medical Department employees paid either on Form 335 or Form 334, must be shown on the report.

3. Where two or more rates of pay or salary are received by an employee within the month, the amount received at each rate of pay or salary will be shown separately in the "Base salary" and "Total" columns. The amount in each instance will be exclusive of the bonus paid from the "Increase of compensation" fund. Where an employee does not receive a full month's compensation, an explanation why will likewise be made, whether leave of absence without pay, separation from the service, or other cause.

4. The small letters "a," "b," etc., will be shown after the authorization number to indicate an employee who has been appointed to fill a vacancy, as outlined in Circular Letter No. 258, paragraph 6. All authorization numbers assigned to positions remaining unfilled at the end of the month will be shown on the report, followed by remarks showing why employment thereunder has not been accomplished. Authorization numbers will be noted in a conspicuous place on all letters of appointment and contracts of employment.

5. In this connection, you are informed that two persons can not hold employment under the same authorization and receive pay for the same period. In other words, a person can not be employed to fill a prospective vacancy until the day following the separation from the service of the present incumbent.

6. It is requested that a corrected report for July be forwarded to this office at the earliest practicable date, to be followed monthly by the report as outlined in Circular Letter No. 258 and in the foregoing instructions.

(*Cir. Letter No. 289, Surgeon General's Office, August 23, 1919.*)

Reduction in Civilian Personnel by Months.

1. The following communication from The Adjutant General of the Army, under date of October 2, 1919, is quoted for the information and guidance of all concerned:

> 1. The cost of civilian employees retained by the War Department has reached very large proportions. The cost of those employees runs into several millions each month and makes a severe drain on the limited appropriation made by Congress for this fiscal year.
>
> 2. A great many of those civilians were employed in order that emergency men might be discharged, and their services may be essential for the upkeep of your camp, post, or station. How-

ever, it has been decided that a very considerable reduction must be made in the near future in this civilian personnel in order that the War Department may get through the year without a deficit. Keeping this object plainly in view, you are directed to report to this office, attention room 336, if, in your opinion, a reduction of 10 per cent or more can be made in the cost of your civilian personnel during each of the months October, November, and December, 1919.

3. There are two very obvious methods by which your civilian pay roll can be reduced: The first is through the use of enlisted men to replace civilians; the second is by dispensing with the services of a portion of the civilians now employed. The results obtained through the first method can undoubtedly be increased through more intensive recruiting methods, the sending out of recruiting parties, etc. The results obtained by the second method can undoubtedly be increased if a careful, systematic analysis is made of the entire personnel of your camp, post, or station in order to assure yourself that every man in your camp, either civilian or enlisted, is absolutely essential to the work he is now employed upon. By getting daily or weekly reports of this kind from every department within your camp, you will be in close enough touch to be able to take advantage of every opportunity to economize on civilians and soldiers.

4. Although, under present regulations, the auxiliary remount depots, camp supply officers, camp finance officers, and camp utilities officers are, so far as personnel is concerned, not under the complete control of the camp commander, you are directed to make frequent inspections of those camp organizations with a view to their most economical operation. Where, in your opinion, the best results are not being obtained, and the camp staff officer concerned is unwilling to make the desired changes, you will report to this office promptly, attention room 336, conditions found, the action taken by you, and will make such recommendations as you see fit to correct existing conditions. These matters will then be taken up by this office with the staff corps concerned with a view to the more economical operation of your camp.

5. Report called for by paragraph 2 above will be made without delay.

2. The above-quoted letter was addressed to commanding generals of territorial departments; commanding generals, port of embarkation, Hoboken, N. J., and Army supply base, Norfolk, Va., and commanding officers, all excepted camps and stations.

(*Cir. Letter No. 329, Surgeon General's Office, October 18, 1919.*)

Employment of Civilians at Rates of Pay in Excess of $60.

1. Paragraphs 104 to 106, M. M. D., 1916, lodge in the Medical Department the power to appoint civilians needed for the proper care of the sick in military hospitals under such practical tests of competency as the Surgeon General may prescribe.

2. For the duration of the emergency, now behind us, it was considered expedient to permit commanding officers to appoint, subject to confirmation of this office, all employees for duty at a military hospital. That procedure was not, however, strictly conformable to paragraph 106.

3. Effective at once, no appointments of employees whose pay exceeds $60 per month will be made except upon a satisfactory showing of the necessity therefor, and then only by the Surgeon General. In case of a vacancy in a position previously authorized the salary or rate of pay of which exceeds $60 per month, the officer under whom it occurs will promptly advise the Surgeon General whether it is necessary to fill the same, and if so, will make such recommendation for promotion or original appointment as may be appropriate. If it is desired to make original appointment, the names of at least three persons, their ages, qualifications, experience, etc., will be submitted to this office for consideration, with a view to appointment by the Surgeon General.

4. Acknowledgement of the receipt of these instructions is requested.

(*Cir. Letter No. 334, Surgeon General's Office, October 27, 1919.*)

Wages Paid for Civilian Labor.

1. The following communication from The Adjutant General of the Army, under date of October 24, 1919, is published for the information and guidance of all concerned:

> An instance has been reported where one bureau of the War Department, in an effort to bring to rapid completion a project of an emergency nature, hired skilled mechanics for a short period of time, in excess of prevailing rates normally paid mechanics and also in excess of the prevailing union rate, which was considerably in excess of the rate which another bureau of the War Department was paying for skilled labor in the same locality, causing a strike of the employees of the last noted bureau because it would not meet the same wage scale as that being paid by the first-mentioned bureau.
>
> You are directed to issue such instructions as will insure that all officers in your service who are charged with the hire of labor, skilled and unskilled, will not exceed the normal wage scale of the locality wherein the labor is employed and where more than one War Department agency are operating in the same locality, to insure that by proper coordination an identical wage scale is effected so far as the War Department is concerned.

(*Cir. Letter No. 336, Surgeon General's Office, November 27, 1919.*)

Civilian Employees, Medical Department at Large.

1. The appropriation "Medical and Hospital Department, 1920," is entirely inadequate to meet the needs of the Medical Department for the remainder of the fiscal year 1920.

2. Effective January 1, 1920, all positions authorized by this office prior to December 1, 1919, and which remain unfilled on the former date will be automatically canceled, and no employments thereunder will be made.

3. To enable this office to keep a closer check on Medical Department funds, from and after January 1 the life of an authorization will be limited to 30 days from the date thereof, or from the date the position is vacated. In other words, a position remaining unfilled or a position which has been filled and vacated for a period of 30 days is automatically canceled at the expiration of the 30-day period, and no employment will be made thereunder without securing further authority from this office.

4. Employments involving a salary or rate of pay in excess of $60 per month are provided for in paragraph 3 of Circular Letter No. 334, dated October 27, 1919, and are made only by the Surgeon General. In addition, the following classes of employees are appointed only by the Surgeon General.

(*a*) Laboratory technicians, (*b*) dietitians, (*c*) reconstruction aids, (*d*) stenographers, (*e*) student nurses.

5. For the information and guidance of appointing officers, the data outlined below must be given in reporting employments:

(*a*) Full name of new employee and that of previous incumbent.

(*b*) Designation of position as authorized by this office.

(*c*) Salary or rate of pay of new employee and of previous incumbent.

(*d*) Authorization number assigned to position by this office (vide, par. 6, Circular Letter No. 258, July 16, 1919.).

(*e*) Date employment is effective.

(*f*) Date and cause of separation of former incumbent.

(*g*) Whether employment was made through civil service and whether employment is temporary or probationary.

(*Cir. Letter No. 366, Surgeon General's Office, December 22, 1919.*)

Efficiency Report.

1. Paragraphs 120–128, M. M. D., 1916, provide that on June 30 and December 31 of each year a report will be furnished of the efficiency of civilian employees of the Medical Department at Large.

2. Blank forms are inclosed for compliance with the requirements of the paragraphs herein mentioned. It is requested that the inclosed blanks be properly executed and returned to this office not later than January 15, 1920.

3. In determining the efficiency of employees, the factors of "attendance," "ability," "adaptability," "habits," and "application" should each be marked separately on a scale of 100. As indicated on the efficiency blanks, in the column marked "Relative weight," ability will be given four times the weight, adaptability twice the weight, and habits twice the weight of either of the other factors, which will be given the weight of 1. The final efficiency figure will be obtained by dividing by 10 the sum of the markings under the several headings. For example: Paragraph 123*a*, M. M. D., limits the markings of an employee in either adaptability or ability to 95, which, reduced to a scale of 100 and multiplied by 2 and 4 respectively, would give a maximum rating of 190 for adaptability and 380 for ability. For convenience, the maximum ratings that can be given an employee are as follows: Attendance, 100; application, 100; habits, 200; adaptability, 190; ability, 380.

4. The highest grade from point of salary will be shown first on the efficiency report, the next highest will follow, and so on until all civilian employees on duty at your hospital on December 31, 1919, have been listed in their respective grades on the report.

5. The grade will be indicated by the designation authorized by this office followed by the annual base (not the monthly) salary of the individual. By base salary is meant the salary or rate of pay authorized by this office, exclusive of the increase of compensation, commonly known as the "bonus."

6. The employee receiving the highest rating will stand No. 1 in his grade.

(*Cir. Letter No. 374, Surgeon General's Office, December 30, 1919.*)

MEDICAL DEPARTMENT TRAINING.

Training of Sanitary Personnel of Divisions.

1. These instructions are intended to coordinate the work of training medical personnel in all divisions so that it may be carried out on common lines. To this end the general provisions of this letter will be strictly observed.

2. All details of execution are left to you and you are held responsible for proper results.

3. With the concentration of troops in divisions, each division will, so far as the Medical Department is concerned, constitute a training unit for its sanitary personnel, both commissioned and enlisted.

4. This training will consist of two parts—one in which the medical personnel is trained in their military duties and military environment, the other in which the medical personnel is trained in such professional matters as are created or affected by such military environment. Both are necessary.

5. It is realized that with the organization of new troops there must first be a period for organization, equipment, and supply. Under such conditions, with green men, the performance of almost any military duty is new and valuable as a matter of education. For this reason, the scope of instruction may safely be left to detachment and unit commanders for some weeks, subject to the oversight of the division surgeon, but on November 1 the present plan of medical divisional training will be put into operation and continued as long as the division remains in the United States.

6. This Nation is at war and training must be intensive and arduous, so that the sanitary personnel may be fitted for service with the least possible delay. It is a time which calls for every effort and self-sacrifice, and sloth, indifference, and inertia on the part of individuals must not be tolerated.

The efficiency of the Medical Department as a whole, as well as in each division, with a personnel composed in large part of those inexperienced in the military service, very clearly depends upon the thoroughness and efficiency with which training is carried out.

7. It must be emphasized that the duties of the Medical Department are multifarious, that all are necessary, that any and all individuals may be called upon with little or no notice to perform them, and that training on one line of sanitary duty may give little or no preparation for other lines of work equally important.

It is not possible to limit the liability of any individual to one class of duty. Hence, each must be prepared to efficiently carry out any of the various duties which they will very likely be called upon to perform from time to time.

8. It is obvious that the proper performance of the routine daily duties of the sanitary personnel is of the greatest immediate importance and must be effectively carried out. But it is equally true that some hours daily should be available after this daily routine is accomplished, and this spare time should be effectively used in preparing for future duties and probable contingencies.

9. Training will be carried out under direction of the division surgeon, who will prepare a schedule of systematic training in general conformance with this letter of instructions, and submit the same to the division commander, with request that it be issued as a division order.

10. To assist him in this most important work of preparing his sanitary personnel for war service, the division surgeon will designate a suitable medical officer as "training officer," and, if necessary request his relief from other duties.

The duties of the "training officer" will be, under the division surgeon, to classify the personnel, both commissioned and enlisted, into suitable groups for training according to their relative knowledge and experience, arrange for competent instructors, recommend the subjects and hours of instruction for each group, and by constant supervision and assistance, verify and promote the efficiency of the training work.

11. In each camp there will be found a considerable proportion of officers and men who have had a certain amount of military experience, either at a Medical Officers' Training Camp or though previous service. This personnel should be sought out and their services fully utilized as instructors. The well trained must aid the partly trained, and both must unite to teach what they know to the large group of the wholly uninstructed. They are the instructors upon whom the training officer must rely to carry out the details of his work.

12. Officers and men detailed by you as instructors should be given special authority while serving as such, irrespective of rank.

13. In a general way, the course of instruction should be considered to cover about a three months' period. Schedules should provide for its completion by January 15 to February 1.

Troops going abroad before that time will necessarily discontinue this course of training.

14. Attendance at all training exercises and lyceums is a military duty. No person should be excused from attendance except for official reasons and in emergency.

Check lists of attendance will be kept and absentees reported to the proper officer.

Excessive routine duty will not be accepted by this office as an excuse for failure to carry out a reasonable amount of training.

15. As far as possible, the training to be given sanitary personnel will be coordinated.

For this purpose there must be systematized rotations of duty. As soon as an officer or enlisted man is able to efficiently perform the task set him, he should be given opportunity to learn something else. The regimental sanitary personnel, after becoming competent to handle regimental work, should be temporarily assigned in detachments to ambulance companies and field hospitals, and vice versa, for mutual familiarity with the duties and methods of these diverse organizations.

It is realized that these changes of duty for instruction purposes may be objected to by subordinate commanders as interfering with the highest efficiency of their organizations. Such objections should not be entertained. The efficiency of the medical service of the division as a whole is first to be considered, and until this has been secured to the satisfaction of the division surgeon, all regimental detachments and sanitary units of the division should be regarded as training organizations.

16. The subjects in which medical officers must be qualified are as follows:

Setting up.—Medical officers will take this daily with the troops to which they are attached.
Drills.—Marching, litter, ambulance, other means of transport.
Inspections.—Personnel and environment.
Equitation.—Saddling, bridling, care of animals.
Tent pitching.—Personal equipment of the soldiers; its care, field and surplus kits.
First aid.—Using soldiers' equipment.
Examination of recruits, with papers and finger prints.
General organization of the military forces of the United States.
General organization of the Medical Department for war.
Relation of the Medical Department to the rest of the Army.
Paper work relating to the Medical Department.
Paper work relating to the Quartermaster's Department.
Paper work relating to the Ordnance Department.
Customs of the service.
Duties of the soldier.
Army Regulations.
Manual for the Medical Department.
Field Service Regulations.
Military hygiene and applied camp sanitation, including sanitary inspections.
Map reading, use of compass, orientation, etc.
Elementary road and position sketching.
The regimental detachment; its use, equipment, and administration.
The ambulance company; its use, equipment, and administration.
The field hospital; its use, equipment, and administration.
The Medical Department in campaign.
The principles of sanitary tactics.
The tactical use of Field Artillery (lecture by line officer).
The tactical use of Cavalry (lecture by line officer).
The uses of Engineer and Signal Corps (lecture by officers of service concerned).
The service and mechanism of quartermaster supply in the field (lecture by quartermaster).
Map problems.
War games.
Tactical walks and rides.
Practice marches and bivouacs.
Practical field maneuvers, including brigade and divisional problems, with not less than three night problems, utilizing regimental detachments, ambulance companies, and field hospitals in

coordination. Problems will include the attack, retreat, planned defense, and reencounter with all arms. As far as possible, they will be carried out in actual conjunction with problems by line troops.

Handling of ration, food economy, and mess management.
Manual for Court-Martial and Military Law.
The Articles of War.
The Geneva and Hague Conventions.
The Rules of Land Warfare.
Military surgery.
Poison gases, protection against, and their effects.
Liquid fire, trench foot.
Shell shock; war psychoses and neuroses.
Diseases common on the western front.
Malingering.
Cantonment, evacuation, base and general hospitals, including their organization, administration, records, management, etc.
Sanitary service of the line of communications.
Contagious-disease hospitals, casual camps, convalescent camps, camps for prisoners of war.
Organizations, functions, and limitations of the American Red Cross.
The civil sanitary function of the Army Medical Department in occupied territory.

All medical officers of the division will be required to qualify in the entire course.

17. Much of the instruction should be by recitations and field work. In connection with paper work, all papers required by the medical and other departments will be actually made out until familiarity therewith and correctness of result is secured.

18. To insure due diligence in training work, a board of three senior medical officers should be established in each camp to verify the competency in each subject of officers reported to them as qualified therein. No officer should be excused from training in a subject until the above board has reported him as qualified.

19. The attention of all officers with the division should be drawn to the fact that their efficiency and value to the service will largely depend upon the use they make of their opportunities for training.

The second increment of the National Army will come into being about the time the training of your medical officers will be completed. A large number of officers competent to perform the more important duties connected with this second draft will be required. This office proposes to call for recommendation as to the medical officers and enlisted men of present divisions who by their zeal, industry, and aptitude have fitted themselves for positions of higher rank and larger authority with organizations to be created later.

20. On the other hand, medical officers who through indifference or inertia fail to qualify themselves properly for their duties, and who do not respond to local disciplinary measures, should be recommended by you to this office for summary separation from the service.

21. It is proposed to check up the efficiency of divisional training by frequent inspections of officers of the Inspector General's Department and by special inspectors from this office.

22. The textbooks authorized and published by the Government are as follows:

Army Regulations.
Manual for the Medical Department.
Drill Regulations for Sanitary Troops.
Field Service Regulations.
Rules of Land Warfare.
Tables of Organization.

Each officer should possess a copy for study and reference.

You should make requisition without delay for such number of those as may be required to meet the needs of the commissioned and enlisted personnel of your division.

23. The books of reference authorized are as follows:

Military Hygiene, Asburn.
Sanitation in War, Lelean.
Notes on Sanitation, Vedder.
Gunshot Injuries, LaGarde.
Military Surgery, Penballow.

Sanitary Tactics, Munson.

Medical Service in Campaign, Straub.

Also any handbooks published under authority of the Surgeon General.

It is intended that a sufficient number of these should be kept in the base hospital to meet all needs. They should be kept in the hospital library, and be loaned as required to all medical officers.

Professional magazines issued to such hospitals should be available to all concerned.

24. Training will, as far as possible, be made practical. Medical officers and enlisted men of the Medical Department, after learning in theory how a duty should be performed, should be made to actually do it in practice.

25. Divisional sanitary detachments and units must not be allowed to become sedentary. Drills about camp and short marches with return to camp are not sufficient. There must be frequent "hikes" of several days' duration, with overnight camps. Nothing prepares for field service like field service. Cantonment life is not field service.

A minimum of eight hours' work a day should be required. There should be not less than four hours' work on Saturday. Credit should be allowed for time actually spent in the performance of necessary routine duties. Sunday should be regarded as a day of rest.

In addition, not less than three evenings a week should be designated as lyceum nights, when all available medical officers should be required to meet for lectures, conferences, discussions, clinics, war games, etc., on matters pertaining to the medical sciences and military service.

26. Beside the training along medico-military lines already outlined, there must be training along professional lines, especially when these are subject to modification from civilian standards by reason of military necessity and environment. There is opportunity to broaden the outlook and add to the professional efficiency of all, but the professional subjects in which there is an immediate and direct application to the military service are of the first importance.

27. As part of the training course along professional lines, the various specialists attached to the base hospitals, and others sent out by this office, will give outline courses along the lines of their work on which it is important that medical officers in general should be informed. These will take the form of lectures, demonstrations, clinics, presentation of cases, etc. Instructions as to the nature and scope of the formal instruction to be thus given will be sent direct by the several specialists' divisions of this office to the specialists concerned.

28. The subjects of general and orthopedic surgery, general and military medicine, advances in hygiene and sanitation, diseases and injuries of the brain, head, eye, ear, nose and throat, bacteriology and pathology, genito-urinary diseases, psychiatry and neurology, roentgenology, and medical and surgical supplies will be thus covered.

29. The lectures, demonstrations, etc., to be given by specialists in their respective subjects are to be practical. They are not intended to turn the general practitioner class of medical officers into specialists, but to outline to such general practitioners their part in the prevention and cure of important disorders and disabilities through early diagnosis and proper action and the manner in which specialists can be of service to them in the more obscure cases of illness or injury, with some discussion of the specialists' methods to be employed. They are intended to demonstrate how better professional teamwork may be accomplished.

30. This course of instruction by specialists and lyceums will be arranged by the commanding officer, base hospital, who should confer with the division surgeon as to the hours and places most convenient for all concerned.

31. This office proposes to maintain a circuit for certain lectures by authorities in their subjects, to be illustrated by moving pictures and lantern slides. The Adjutant of the Army Medical School, Washington, D. C., will handle all details relative to this illustrated lecture circuit.

Moving pictures of a nonprofessional nature, but illustrating general military service with troops, will also be sent out for exhibition. The purposes of these pictures are to familiarize medical officers with the conditions and difficulties of the military environment and of the functions of the other branches of the service with whom they will be associated. The exhibition of such pictures will be credited as part of the lyceum course.

32. You will also prepare a course of training for enlisted men, intended to familiarize them first with their present duties, and then systematically give them an insight into the other varieties of service under the Medical Department which they may be at any time called upon to perform.

33. You will also establish and maintain a school for candidates for promotion as noncommissioned officers. Details of this course are left to you.

34. Suitable arrangements will be made by you for the effective special instruction of selected men required for dispensary and surgical assistants, ward masters, clerks, cooks, chauffeurs, blacksmiths, farriers, saddlers, and other special duties.

35. Schedules of instruction covering the above subjects will be prepared by you without delay.

36. Copies of such schedules will be furnished this office for its information prior to the beginning of the training course.

37. The mounts and animals of the regimental detachments, ambulance companies, and field hospitals should be used in instruction of all officers and enlisted men in equitation, driving, and packing.

38. Receipt of this letter will be acknowledged.

(*Cir. Letter, Surgeon General's Office, October 3, 1917.*)

Professional Training of Medical Officers.

1. The following outline of instruction to be used in the training of the Medical Reserve officers in the duties of medical officers at base hospitals is provided for your information.

2. When practicable, clinics and demonstrations will be used in connection with the instruction outlined herein.

1. *Administration.*—Lectures by the commanding officer and such officers of the base hospital staff as have had previous experience and training in administrative subjects. These lectures to deal particularly with base hospital regulations and duties with specific instruction in the duties of commanding officer, adjutant, registrar, mess officer, supply officer, commanding officer of detachments, and ward administration. Such courses of study and recitation will be prescribed in Army Regulations, Manual of the Medical Department, and other manuals as are necessary and practicable.

SYLLABUS OF LECTURES TO BE GIVEN BY CAMP MEDICAL SUPPLY OFFICERS.

1. The supply tables:
    (*a*) Classification of supplies.
    (*b*) Nomenclature of supplies.
    (*c*) Normal allowance of various Medical Department units (pars. 474–476 and 842–959, Manual for the Medical Department, 1916).
2. Requisitions (pars. 474–495).
3. Transfer of medical supplies (pars. 496–500).
4. Accountability (pars. 501–503).
5. Distribution of field supplies in time of peace (pars. 504–506).
6. Distribution in zone of advance. (See Field Service Regulations.)
7. Replenishment in combat (pars. 551–554 and 858).
8. Returns of medical property (pars. 507–508).
9. Sales of medical property (pars. 509–510).
10. Distribution of medical property on abandonment of post (par. 511).
11. Use and care of medical property (pars. 512–526).
12. Base medical supply depots (pars. 782–786).
13. The advance medical supply depot (pars. 787–792).

OUTLINE OF COURSE OF INSTRUCTION IN INTERNAL MEDICINE TO BE GIVEN BY CHIEFS OF MEDICAL SERVICE, BASE HOSPITALS.

This course of instruction is intended to familiarize medical officers serving with troops in the field with the more important diseases which they may encounter, their diagnosis, and the means for their prevention and treatment, with a view to securing prompt and suitable action when such cases arise. It is not the purpose of this instruction to make regimental officers hospital specialists, but to indicate to them their part in the teamwork of the Medical Department which will result in each sick soldier receiving promptly the best treatment, whether that be in regimental field hospital, at the base hospital, or in special general hospitals, and will make them most efficient in preventing the spread of disease among the troops.

I. Examination of recruits:
1. Methods of examination of the heart.
2. Principles of interpretation.
3. Causes for rejection.
4. Cardiovascular diseases which are most often overlooked in recruiting.
5. Border-line cases and difficult decisions.

II. Examination of the lungs:

(Outline should be furnished by Colonel Bushnell.)

III. Disorders of the heart common in soldiers:

1. "The soldier's heart," symptoms, causes, prevention, treatment, including projected special hospitals, and prognosis, military and individual. Emphasis on the importance of observation of recruits during training by regimental medical officers and overseas. The importance of a sufficient period for convalescence and retraining after acute infections, in particular influenza trench fever, and diarrhea.

2. The acute infections of the heart, endocarditis, pericarditis, and myocarditis; when to be on the watch for their occurrence; their prevention, treatment, and prognosis, military and individual.

IV. Tuberculosis in the soldier:

(Outline should be supplied by Colonel Bushnell.)

V. Lobar pneumonia:

The newer knowledge of the fixed types of pneumococci, the means of determination of the type for specific treatment; treatment of Type I, infections by serum; symptoms and physical signs of pneumonia in the first few days and the importance of early diagnosis; prognosis in the different types.

VI. The acute respiratory infections, sore throats, and diphtheria:

1. Importance of acute colds and bronchitis as forerunners of pneumonia; complications of acute respiratory infections, especially infection of the accessory sinuses and middle ear.

2. Tonsillitis, pharyngitis, etc.—Importance of throat cultures in all cases; complications, especially acute nephritis, endocarditis, and other forms of streptococcus sepsis; importance of urine examination after tonsillitis before return to duty.

3. Diphtheria—Diagnosis, antitoxin treatment; carriers of the virulent and avirulent bacilli and modes of dealing with them. Carriers after an attack usually harbor bacilli in the tonsils and are even rendered free by tonsillectomy. The Shick reaction and its value in determining the need for immunization of a group of individuals

VII. Epidemic meningitis and poliomyelitis:

1. Importance of epidemic meningitis among troops in camps and barracks.

2. Early symptoms and diagnosis.

3. Lumbar puncture and exact diagnosis.

4. Serum treatment including strains of memingococci and bearing on failure of serum treatment, as in the epidemic among Canadian and British troops early in the war.

5. Carriers and the great importance of their detection and isolation. Improved methods for the treatment of carriers.

6. A brief sketch of poliomyelitis with reference to the more acute forms and possibility of confusion with meningitis, either epidemic or tuberculous.

VIII. The exanthemata:

1. Measles—Early diagnosis, especially Koplik spots; treatment and prevention with special reference to Colonel Munson's observations on sun and air.

2. German measles and its differential diagnosis from measles.

3. Scarlet fever—Early diagnosis, prevention; the important complications in the throat, heart, kidneys, and joints; combined scarlet fever and diphtheria.

4. Typhus fever—Modern knowledge of transmission by the louse; frequency in prison camps, etc.; symptoms and diagnosis of mild and severe forms; prevention.

5. Smallpox—Recognition of mild cases of varioloid.

IX. The malarial fevers; mode of treatment and prevention:

1. Treatment of tertian maleria and of aestivoautumnal with special reference to the need for continued use of quinine; treatment of pernicious malaria, intravenous and intramuscular use of quinine dihydrochloride.

2. The animal parasites, especially hookworm; treatment by oil of chenopodium; prevention.

X. Dysentery and diarrhea:

1. Bacillary dysentery, its causes, symptoms, treatment, and prevention.

2. Amebic dysentery—Diagnosis and difference in symptoms from those of bacillary dysentery; treatment by emetin; importance of early treatment of acute stage; general treatment; amebic cysts and carriers.

3. The nonspecific diarrheas—Causes, prevention, importance of treatment, and safeguarding for a few days subsequently.

XI. Typhoid and paratyphoid fevers and trench fever:

1. Typhoid and paratyphoid with reference to modes of infection and importance of general prophylaxis. Specific immunization; diagnosis in the immunized; carriers.

2. Trench fever—Its symptoms, diagnosis, wholly favorable prognosis; need for rest and for safeguarding during convalescence; theories as to causation and transmission.

XII. Nephritis, infectious jaundice, and tetanus:

1. Acute nephritis as seen at the western front.

2. Infectious jaundice and spirochaetal infections.

3. Tetanus—Its prevention, symptoms of mild tetanus; treatment by intraspinous antitoxin.

XIII. Gas poisoning—Its symptoms, diagnosis, prognosis, and treatment:

(A short monograph covering this will be prepared by Major Hoover, M. R. C., if desired.)

SYLLABUS OF INSTRUCTION IN STANDARD METHODS FOR TREATING FRACTURES.

The purpose of this course of instruction is to familiarize medical officers with standard methods in the treatment of fractures. It is intended that officers so trained will not only serve in the special fracture hospital, but in field, base, and general hospitals and as regimental officers as well, so that a continuity in the methods for treating fractures can be maintained. By this means it is proposed to establish teamwork on the part of medical officers throughout the Army, in order that the wounded soldier will receive promptly the most efficient treatment, whether at the regimental aid station, the dressing station, the field hospital, the evacuation hospital, or the base hospital, as well as along the lines of transportation. The logical result of this cooperation will be to secure early recovery, lessen deformity, and reduce the number of soldiers permanently disabled to a minimum. It is realized that the exigencies of the service in the zone of the advance will frequently be such as to render the standard methods impracticable, but by indicating clearly the desideratum it is hoped that the difficulties in the field will act not so much as an obstacle as a stimulus to the ingenuity of the medical officers.

Fractures in war are usually compound and will be much more prevalent than the simple, so that any treatment which considers merely the fractures and not the wound and the soldier would be quite ineffective. Consequently, the course of instruction will be initiated with a brief but thorough presentation of wounds, from a military standpoint, their causes, and their treatment. This will be followed by the course in standard methods for treating fractures proper. The instruction will be intensely practical in nature, consisting in the demonstration of the splints, their adaptability and application, and in clinics.

Causes and varieties of wounds:
1. Bullet wounds—
    - (*a*) Shrapnel.
    - (*b*) Rifle.
    - (*c*) Pistol.
2. Shell wounds—
    - (*a*) Shell fragments.
    - (*b*) Shell fuse.
    - (*c*) Hand grenade.
3. Bayonet wound; sword wound.
4. Burns.
5. Gas.
6. Varieties of wounds—
    - (*a*) Abrasion.
    - (*b*) Contusion.
    - (*c*) Laceration.
    - (*d*) Puncture, complete or incomplete.

Condition of wounded men:
1. Hemorrhage, excessive (shock).
2. Exposure, wet, cold; hunger.
3. Shell shock.
4. Gas.
5. Visceral injury; abdominal, thoracic, and head.
6. Infection; pyogenic, tetanus, gas bacillus.
7. Suppuration.

Treatment:

General—
1. Water administered—
    - (*a*) Mouth.
    - (*b*) Rectum.
    - (*c*) Hypodermoclysis.
    - (*d*) Intravenous; dangers.
2. Food and hot drinks.
3. Modification.

Local—
1. Wound antisepsis—
    - (*a*) Excision, necrotic tissue.
    - (*b*) Wound cleansing foreign body removal.
    - (*c*) Tincture of iodine.
    - (*d*) Dakin-Carrel method.
    - (*e*) Dichloramin-T.
2. Hemorrhage—
    - (*a*) Pressure by bandage; cautions.
    - (*b*) Packed; cautions.
    - (*c*) Tourniquet; cautions.
    - (*d*) Ligation of artery; cautions.
    - (*e*) Amputation; indications.

Treatment—Continued.
  Local—Continued.

3. Dressings—
   - (*a*) Dry antiseptic.
   - (*b*) Suture; indications.
   - (*c*) Drainage; indications.
4. Infection—
   - (*a*) Suppuration.
   - (*b*) Gangrene.
   - (*c*) Drainage.

Fractures:
  At the dressing station—

1. General treatment.
2. Wound antisepsis; 2 per cent iodine superficial.
3. Wound cleansing.
4. Immobilization and extension methods.
   - I. Fractures of the upper extremity—
     - (*a*) Simplest splint arm to chest.
     - (*b*) Screen wire and wood splints.
     - (*c*) If practicable, Thomas arm splint; elbow splint.
   - II. Fractures of the lower extremity—
     - (*a*) Rifle down the side of leg with coat between legs and these lashed together.
     - (*b*) Screen wire and wooden splints.
     - (*c*) C. Femur. Thomas knee splint for fracture of femur. In fracture of femur, the soldier, once placed on litter, is not to be removed therefrom.
   - III. Fracture of rib; immobilization.
   - IV. Fracture of pelvis; fixation. Not removed from litter.
   - V. Joints.
5. Infections; special treatment—
   - (*a*) Tetanus—serum.
   - (*b*) Gas bacillus—aeration; antitoxin.
   - (*c*) Pyogenic.
6. Amputations, contraindications; indications.
7. Anesthesia.
8. Diagnosis tags. These must be kept up to date, particularly with fracture.

Transportation:

1. Cases sorted into transportable and nontransportable.
2. Maintenance of immobilization and extension, where practicable. Methods—Not more than 12 hours should elapse without the splint being inspected by a surgeon, and necessary adjustments made.
3. Femur, special treatment for fractures of, in transit. Not to be removed from litter. Thomas knee splint inspected once every 12 hours.

Evacuation hospital, special fracture hospital, base hospital:

1. Early and adequate surgery.
2. Wound antisepsis.
3. Wound cleansing.
4. Conservation of fragments.
5. Immobilization and extension; standard methods—
   - I. Fracture of upper extremity—
     - (*a*) Humerus—
       - (1) Jones humerus extension splint.
       - (2) Jones abduction splint.
     - (*b*) Elbow splint.
     - (*c*) Radius and ulna—Jones forearm and wrist splint.
   - II. Fracture of lower extremity—
     - (*a*) Femur—Thomas knee splint; Hodgen splint, overhead suspension and extension from Balkan frame or on special fracture bed.
     - (*b*) Tibia and fibula—Jones leg splint and Cabot splint.
   - III. Fracture of rib; immobilization.
   - IV. Fracture of pelvis; fixation; Bradford frame.
   - V. Joints operative indications; foreign body removal; drainage.
6. Malunion and nonunion; caution; late tetanus and infection.
7. Infections; special treatment.
8. Operative treatment, indications for; standard methods.
9. Amputation, special.
10. Anesthesia, ether-drop method, chloroform; nitrous oxide; spinal, tropococaine.
11. Examinations, special methods—
    - (a) Roentgen ray.
    - (*b*) Bacteriological.
12. Massage and baking.
13. Hydrotherapy.
14. Curative workshop; reconstruction.

SYLLABUS FOR THORACIC WOUNDS IN WAR.

Thoracic wounds:
- I. Causes and varieties of wounds—
    - 1. Bullet wounds—
        - (*a*) Shrapnel.
        - (*b*) Rifle.
        - (*c*) Pistol.
    - 2. Shell wounds—
        - (*a*) Shell fragments.
        - (*b*) Shell fuse.
        - (*c*) Hand grenade.
    - 3. Bayonet wound; sword wound.
    - 4. Varieties of wounds—
        - (*a*) Laceration, thoracic wall; back.
        - (*b*) Perforating (puncture) wounds; complete, incomplete.
        - (*c*) Concussion of spinal cord; brachial plexus.
        - (*d*) Pseudo-perforating wound.
- II. Pathology—
    - 1. Shock.
    - 2. Hemorrhage.
    - 3. Dyspnœa.
    - 4. Haemoptosis.
    - 5. Vomiting and hiccough.
    - 6. Death, immediate causes of.
    - 7. Infection—
        - (*a*) Pyogenic.
        - (*b*) Tetanus.
        - (*c*) Bacillus, aerogenes.
    - 8. Surgical emphysema.
- III. Clinical aspects—
    - 1. Pneumothorax.
    - 2. Hemothorax.
    - 3. Pyothorax (empyema).
    - 4. Fracture of ribs.
    - 5. Pneumonia.
    - 6. Pleurisy, effusion.
    - 7. Abscess and gangrene of lung.
    - 8. Subphrenic abscess.
    - 9. Pericarditis; pneumocardium.
    - 10. Paralysis, monoplegia paraplegia.
    - 11. Sequelæ.
- IV. Treatment—
    - 1. Immediate firing line, regimental aid, or dressing station—
        - (*a*) General cars; water; hot drinks; blankets.
        - (*b*) Wound antisepsis.
        - (*c*) Hemorrhage.
        - (*d*) Wound cleansing, if practicable.
        - (*e*) Dressings; dry gauze; graduated pressure.
        - (*f*) Posture of patient—Recumbent on affected side. If practicable, not disturbed. No walking.
        - (*g*) Medication—Morphine, atropine.
        - (*h*) Transportation—Rest one of main factors in treatment.
    - 2. Intermediate; regimental aid; dressing station—
        - (*a*) General care; food; water; hot drinks; blankets.
        - (*b*) Wound antisepsis.
        - (*c*) Anesthesia; chloroform; ether; drop method.
        - (*d*) Wound cleansing; operation; indication for; foreign body, removal.
        - (*e*) Dressings; immobilization of affected side—
            - (1) Fresh cases.
            - (2) Suppurative cases—
                - Dichloramin—T.
                - Carrel-Dakin.
                - Moist dressings.
        - (*f*) Medication.
    - 3. Field hospital, evacuation hospital, base hospital—
        - (*a*) Examination; special methods—
            - Bacteriological.
            - Roentgen ray.
        - (*b*) Operations; special methods; indications.
        - (*c*) Suppuration, treatment of.
        - (*d*) Complications, special treatment for.

SYLLABUS FOR ABDOMINAL WOUNDS.

I. Variety of wounds:
  1. Contusions—
    (a) Abdominal wall.
    (b) Ruptured viscera, or blood vessels.
  2. Puncture wound of abdominal wall (nonpenetrating).
  3. Penetrating wounds (nonperforative of viscera, or blood vessels).
  4. Perforating wounds.
II. Pathology:
  1. Shock.
  2. Hemorrhage.
  3. Infection—
    (a) Pyogenis.
    (b) Tetanus.
    (c) Bacillus aerogenes.
  4. Protrusion of viscera.
  5. Perforation, visceral.
  6. Peritonitis.
  7. Extraperitoneal infection.
III. Diagnosis; early differential.
IV. Clinical aspects:
  1. Hemorrhage.
  2. Perforation of hollow viscus, early symptoms.
  3. Extravasation, urine.
  4. Peritonitis.
  5. Abscess; subphrenic, perirenal; pelvis.
  6. Septicæmia.
V. Treatment:
  1. Immediate, firing line, regimental aid, or dressing station—
    (a) General care; blankets; no water; no food.
    (b) Wound antisepsis; iodine.
    (c) Dressings—Dry gauze.
    (d) Posture of patient—On back, thighs flexed, head raised.
    (e) Medication—Morphine.
    (f) Transportation—Patient moved to adequate operating station as expeditiously as possible. Not removed from litter till operating station is reached.
  2. Mobile operating unit, field hospital, evacuation hospital—
    (a) Wound cleansing.
    (b) Operation, methods and indications for.
    (c) Anesthesia; ether, chloroform, drop method.
    (d) Roentgen-ray examination.
  3. Base hospital—
    (a) Infections, special treatment for.
    (b) Complications, treatment of.
    (c) Roentgen-ray examination.
    (d) Operations, methods and indications for.

OUTLINE OF COURSE OF INSTRUCTION IN OPTHALMOLOGY.

Instruction in ophthalmology should include the following-named subjects:

1. Methods of testing visual acuity.

2. Methods of testing pupillary reaction. Significance of pupillary normalities.

3. The simpler methods of testing the ocular rotations and the associated movements of the eye, including convergence.

4. External examinations:

(a) Method of everting the lids.

(b) Examination with oblique light. Especial attention to its importance in detecting abrasions of the cornea, corneal ulcers, the presence of small foreign bodies and iritic adhesions; use of fluorescein.

5. Epiphora and its significance.

6. Inflammation of the lachrymal apparatus.

7. Inflammation of the lids and globe.

In general, all cases of inflammation should suggest the following possibilities, arranged in the order of their importance: Glaucoma, iritis, conjunctivitis, foreign body in the conjunctiva.

8. Trachoma and other contagious diseases of the conjunctiva.

9. Importance and significance of bacteriological examination in conjunctivitis.

10. Indications and contra-indications for the use of mydriatics and miotics.

11. Wounds of the eye and orbital region.

12. The importance of a thorough examination in every case of injury of the globe.

13. The importance of X-ray examination in all cases when there is the slightest suspicion of the presence of a foreign body in the eye.

14. The use of magnets in military eye surgery.
15. Methods of testing and significance of increased intraocular tension; glaucoma and its varieties.
16. Simple methods of determining the field of vision.
17. The significance of a double vision.
18. The causes of gradual and sudden loss of vision, with consideration of whether functional or organic.
19. Ocular malingering.
20. Eye symptoms in cases of increased intraocular pressure.
21. Ocular headaches, vertigo, and reflex gastric and nervous symptoms.
22. Ocular symptoms of disease and focal septic areas, as in alveolar abscess or sinusitis.

SUBJECTS FOR LECTURES IN OTO-LARYNGOLOGY.

EAR.

1. Foreign bodies in the canal; furunculosis of the canal; acute otitis media; acute mastoiditis; sinus thrombosis.
2. Chronic otitis media (polypi); brain abscess; Bárány tests for vestibular function; labyrinthitis.

NOSE AND THROAT.

3. Acute and chronic tonsillitis; discussion of tonsil operations (results of operations in preventing absorption); peritonsillar abscess; nasal obstruction; deviation of the septum; submucous resection of the septum.
4. Acute and chronic sinusitis—Antrum, ethmoid, frontal, sphenoid, (polypi).
5. Epistaxis; fracture of the nasal bones; correction of external deformities of the nose; catarrh; atropic rhinitis; syphilis of the nose and throat.
6. Acute and chronic laryngitis; papilloma of the larynx (cancer).

OPTIONAL.

7. Direct inspection of the larynx and trachea; foreign bodies in the trachea and bronchi: the direct examination of the esophagus; diseases of the esophagus—stricture, pouch, cardiospasm, cancer; foreign bodies in the esophagus.

PLAN FOR THE INSTRUCTION OF NEUROLOGICAL SURGERY IN CANTONED HOSPITALS.

SKULL.

Fractures:
1. Varieties—
    - (*a*) According to mechanism—
        - Bending.
        - Bursting.
        - Expansile.
    - (*b*) Simple or compound.
    - (*c*) According to form of fragments—
        - Fissured.
        - Linear.
        - Comminuted.
        - Diastasis.
        - Depressed.
        - Perforating.
        - Gunshot.
    - (*d*) According to situation—
        - Vault.
        - Base.
    - (*e*) Infection and complications.
    - (*f*) Associated brain injuries.
    - (*g*) Associated injuries to cranial nerves.
    - (*h*) Associated injuries of blood vessels (sinuses, etc.)
    - (*i*) Associated injuries of nasal accessory sinuses.
2. Symptomology.
3. Prognosis.
4. Diagnosis.
5. Treatment.

MENINGES.

1. Physiology of cerebrospinal fluid.
2. Meningitis:
    - Traumatic infective.
    - Pathology and bacteriology.
    - Symptomatology.
    - Diagnosis.
    - Prognosis.
    - Treatment.

BRAIN.

1. Localization of function:
    - (*a*) Excite motor cortex.
    - (*b*) Sensory field.
    - (*c*) Visual cortex.
    - (*d*) Auditory cortex.
    - (*e*) Olfactory cortex.
    - (*f*) Cortical speech centers.
2. Cranio cerebral topography.
3. Symptomatology of organic disease:
    - (*a*) General symptoms.
    - (*b*) Local symptoms.
4. Brain abcess:
    - (*a*) Varieties.
    - (*b*) Pathology.
    - (*c*) Symptomatology.
    - (*d*) Treatment.
5. Technic of intracranial operations.
6. Roentgenography and stereoroentgenography in intracranial disease.

SPINE.

1. Surgical anatomy of vertebral column.
2. Normal and pathological physiology of the cord.
3. Localization in the cord.
4. Symptomatology of spinal disease.
    - Cell destruction.
    - Tract degeneration.
    - Root symptoms.
    - Sensory disturbances.
    - Motor weakness and paralysis.
    - Reflex disturbances.
    - Bladder and rectum.
5. Variations in symptoms according to level.
6. The operatic technic of lamenectomy.
7. Extraction of foreign bodies.

NERVES.

1. Function:
    - (*a*) Motor.
    - (*b*) Sensory—
        - Epicritic.
        - Protopathic.
        - Deep.
2. (*c*) Results of section of motor nerve.
3. (*d*) Results of section of sensory nerve.
4. Nerve shock.
5. Diagnosis of nerve lesion (traumatic).
6. Technique of nerve suture.

OUTLINE OF LECTURES ON PLASTIC AND ORAL SURGERY, SECTION OF SURGERY OF THE HEAD.

1. Surgical anatomy of the face and jaws, bones, teeth, accessory sinuses, soft parts.

2. Sepsis: Special forms of sepsis related to mouth, face, and neck treatment; peridental infection; infection of antrum of Highmore and other nasal accessory sinuses.

3. Wounds and injuries of the face and jaws, with special consideration of injuries by projectiles.

4. Fractures of the jawbones, with special reference to gunshot fractures; displacements; emergency treatment; special care of patient, tissues, etc.; diet; special methods of fixation, splints, etc.

5. Treatment of deformities of bony and soft tissues following gunshot injuries of face and jaws; orthopedic splints; plastic operations; grafting of soft tissues, bone and cartilage.
6. Local anesthesia in surgery of face and jaws.
7. Interpretation of dental and maxillary rontgenograms.

LECTURES ON FOOD AND NUTRITION.

1. The Scientific Background of Nutrition, Maj. John R. Murlin. .
2. The Dynamic Effect of the Different Foodstuffs, Prof. Graham Lusk.
3. The Influence of Muscular Work on Metabolism, Dr. Francis G. Benedict.
4. Complete and Incomplete Proteins, Prof. Lafayette B. Mendel.
5. Accessory Foodstuffs, Prof. V. E. McCollum.
6. Governmental Regulation of Foods, Dr. Carl L. Alsberg.
7. Feeding the European Armies, Prof. Alonzo E. Taylor.
8. Protection Against Spoilage of Foods, Maj. S. C. Prescott.
9. Gastric Digestion in Man, Capt. A. J. Carlson.
10. Work of the Food Division, Surgeon General's Office, Maj. John R. Murlin.

ADVANCED COURSE IN ORTHOPEDIC SURGERY.

1. (*a*) The human foot; its physiology, examination, and the significance of its symptoms.
(*b*) The soldier's foot and the military shoe; prophylaxis.
(*c*) The disabilities of the foot arising during military service and their treatment.

Synopsis: A review and an elaboration of the work done in these subjects in the course given in training camps.

2. Injuries to joints and their treatment.

Synopsis: Also a review and elaboration of the preceding course.

3. (*a*) Injuries to joints and their treatment.
(*b*) Special joints—the knee joint, etc.

Synopsis: The general subject will be continued and elaborated, and the special peculiarities of the knee joint and other joints fully discussed.

4. Positions of election for ankylosis.

Synopsis: The pathological changes leading to ankylosis and the clinical indications pointing to it will be fully explained. The positions in which the various joints are most serviceable will be definitely defined and the reasons for choice of these positions given.

5. The operative procedures available for restoration of function following failure of repair after nerve injuries.

Synopsis: The difficulties involved in the repair of nerves will be fully discussed and the necessity for painstaking orthopedic care in order to secure a successful result after nerve suture emphasized. As alternative measures, where regeneration has failed to take place, tendon transplantation, tendon fixation, and certain bone operations are available, and their technic will be explained.

6. Nonunion and malunion.

Synopsis: The various causes for nonunion and malunion will be reviewed and the operative procedures indicated discussed.

7. Bone grafting.

Synopsis: The danger of operation, and particularly of bone operations, until all sinuses have been closed for at least six months will be strongly emphasized. The indications for bone grafting will be defined and the technic of the various procedures—spinal graft, inlay graft, bone peg—carefully explained.

8. Methods of fixation; plaster of Paris.

Synopsis: The general principles of fixation will be discussed, and the use of plaster of Paris in military work will be fully covered.

9. Methods of fixation; standard splints.

Synopsis: The standard splints will be demonstrated and their indications and use carefully explained.

10. Methods of fixation; nonstandard splints.

Synopsis: Other splints and improvised splints will be demonstrated and their indications and use explained.

OUTLINE FOR LECTURES ON TUBERCULOSIS IN THE SOLDIER.

I. TUBERCULOSIS IN THE SOLDIER.

Signs of active lesion. The acute lesion. The chronic lesion; activity in chronic lesions; distinction between acute and chronic lesions, by physical signs. Distinction by X-ray; bronchopneumonic focus; diagnosis of large lesions, isolated or few in number. Tuberculous pneumonia; development of caseous lesions; physical signs of tuberculous pneumonia in first stage, in stage of consolidation; cavity signs; recent cavitation; old and dry or nearly dry cavities. Disseminated tuberculosis; miliary (vascular) disseminations. Peribronchial tuberculosis; physical signs; varieties and prognosis; X-ray diagnosis.

II. Physical Examination in Tuberculosis.

Necessity of objective examination in military practice. Importance of cough as aid to diagnosis. Topical variations in physical signs in the normal lung. Marginal sounds. Diagnosis by auscultation; breath changes and their significance; kinds and significance of râles. Râle percussion plays in diagnosis of chest conditions. Voice transmission; transmission of whisper.

III. Detection of Tuberculosis Among Soldiers.

Repeated weighing of recruits; those losing weight under training to be specially examined. Tuberculosis usually discovered during an exacerbation; distinction between exacerbation of chronic tuberculosis and incipient active tuberculosis. Rôle of X ray in the diagnosis of tuberculosis. Question of line of duty (Circular 24, S. G. O., and its interpretation). Infection between adults. What is the danger, if any, of spread of tuberculosis among soldiers from contact with tuberculous individuals? The hygiene of the tuberculosis patient; feeding; indications for rest and exercise; hardening methods.

(*Cir. Letter, Surgeon General's Office, Nov. 1, 1917.*)

Practical Training of Substandard Officers.

1. It is thought that the course of instruction in base hospitals, as outlined in letter from this office of November 1, is too advanced for the effective correction of incompetency due to defective medical education and lack of knowledge of the basic technique of medical or medico-military practice, as referred to in circular letter from this office of December 14, relative to the training, transfer, or elimination of substandard medical officers.

2. It is therefore desired that another and simpler course be instituted for medical officers found so lacking. Such a course would be of benefit even to the most advanced, but is required for the class named.

3. The following is desired, the fact that it is necessary to save for service every man capable of developing into a useful officer being borne in mind.

(*a*) Clinical training will be given each day as follows, unless circumstances render a change advisable. Attendance is compulsory.

Monday.—Chest clinic, one hour. Discussion of cases and of manner of their investigation and presentation.

Tuesday.—Surgical clinic, one hour. Discussion as above.

Wednesday.—Diseases of digestive system clinic. Discussion as above.

Thursday.—Fractures and orthopedic clinic. Discussion as above.

Friday.—Psychiatric, neurologic, ductless glands clinic. Discussion as above.

Saturday.—Medical or surgical, bone and joint clinic. Discussion as above.

(*b*) Instruction should be given to individuals or to classes small enough to permit of individual instruction by chiefs of service as follows, attendance being compulsory on the part of all substandard men.

Monday (by chief of medical service).—On routine and thorough methods of physical examination and history writing.

Tuesday (by chief of surgical service).—Similar instruction in relation to surgical cases.

Wednesday (by director of laboratory).—On laboratory aids to the ward surgeon; what may be expected from the laboratory, how it may be obtained, what it may mean; preparation of patient.

Thursday (by director of X-ray laboratory).—On X-ray aids, what may be expected, how obtained, what it may mean, preparation of patient.

Friday (by adjutant or registrar).—Preparation and disposal of hospital records. Importance of them and of their completeness.

Saturday.—Repetition of most-needed instructions.

(*c*) Officers of known incapacity or doubtful capacity will, so far and so long as it is possible, be assigned to base hospitals or other units in excess of the quota of real necessity for the purpose of the above instruction and will there be under constant instruction and will do a full day's work each day under the supervision of an officer of known capacity.

4. No definite period is set for this training of substandard men to remedy their defects and determine their competence. It should be continued so long as they apparently profit thereby. But an officer who at the end of six weeks of intensive instruction does not give promise of reasonable competence at an early date is not worth continuing in the service.

(*Cir. Letter, Surgeon General's Office, December 14, 1917.*)

Instruction, Transfer, and Elimination of Medical Officers Not Rendering Competent Service.

1. It is recognized that a proportion of medical officers now in service are not fully qualified to perform the multifarious and important duties of their positions. The disqualification is due in most instances to physical disability, mental incapacity, temperamental unfitness, slothfulness, inability to command men, or to lack of education or proper training. In some instances it may be only apparent or relative and due to the fact that the individual is for the time being a square peg in a round hole.

2. The courses of instruction in the medical officers' training camps, as laid down in Special Regulations No. 49a, that prescribed for departments by circular letter of May 14, 1917, to department surgeons, by the circular letter from this office to division surgeons dated October 3, and that prescribed for base hospitals in the letter to commanding officers of base hospitals of November 1, have done much and should do more to correct the deficiencies, especially such as are due to other causes than mental incapacity.

3. The number of officers incompetent because of actual physical or mental incapacity is probably relatively small, but it is important that they be eliminated from the service. It is equally important that those incompetent from other causes be made competent or eliminated.

4. It is therefore directed that division surgeons, commanding officers of base hospitals, and other medical officers having subordinates at once list all of their subordinates whose work is not reasonably good, inform them of the contents of this letter, make or have made in each case inquiry as to why the work is not good, and take such of the following steps as may be necessary.

(*a*) If mental incapacity be suspected, the subject will be given a psychological examination on lines and forms prescribed from this office, this to apply until such time as routine psychologic examinations are begun on all officers going to training camps.

(*b*) In order to fit mentally capable men into jobs suited to their capabilities, they will be tried in work other than that in which they have failed. Thus a man whose ward work in a base hospital is quite unsatisfactory may be given a trial in some detail requiring business training, if he has such, or with a field or transportation unit; a man failing or doing poor work in a transportation unit may be given a trial at ward work, and so on. To enable this arrangement to be carried out, division surgeons and adjacent base hospital commanders will arrange for the temporary exchange of such number of medical officers as may be necessary for the purpose.

5. However, a considerable amount of incompetency is due to poor training in the technique of professional work, and a small amount of time systematically spent in instructing certain men in good routine methods of physical examination and history taking may prove sufficient to render them competent. It is therefore directed that no man be exchanged as incompetent until his superior officer (in a base hospital or regiment the chief of his service, in a transport unit his commanding officer) certifies that he has personally given the man proper instruction in technique and is convinced that the man is not capable of becoming competent in that line of work within a reasonable time.

6. Men exchanged will be given proper instruction in the methods and details of this new work, will be assisted in its performance for a reasonable time, and will be saved to the service if they show capacity and if education can save them.

7. Men who by reason of physical or mental incapacity, viciousness, or laziness can not be made competent officers must be eliminated from the service. They should be ordered before a board convened for their discharge under the terms of Bull. 32, par. 9, War Department, 1917, and reported to the Surgeon General as unfit. However, no action will be taken under this paragraph unless the application therefor is accompanied by at least two of the certificates mentioned in paragraph 5 of this letter.

8. Department surgeons will carefully inquire into the qualifications of the medical officers within their jurisdiction. Such as are apparently unsatisfactory will be reported to this office, with request that they be transferred to a base hospital or division with a view to testing out their fitness for service in accordance with the terms of this letter.

9. Commanding officers of general hospitals who have subordinates not regarded as suited to hospital work, but who might be used for field work, will report them by name to this office with recommendation for their transfer to divisions.

(*Letter to all department and division surgeons, and commanding officers of hospitals, Surgeon General's Office, December 14, 1917.*)

Meetings of Medical Officers.

1. The Surgeon General directs that regular weekly meetings be held, to be attended by the commanding officer, the chiefs of service of the base hospital, and all the regimental surgeons, for the purpose of conference upon all matters pertaining to admissions to and discharges from the base hospital and the further general improvement and cooperation of the two branches of the medical service.

(*Letter to division surgeons, Surgeon General's Office, February 23, 1918.*)

Medical Officers' Training Camp Work.

1. Your attention is invited to the attached memorandum, which has been approved by the Surgeon General, proposing a rearrangement of medical officers' training-camp work, which is promulgated for your information and guidance.

2. Numbers of both officers and enlisted men will be released from training camps for general service as speedily as possible, and so reported to the Personnel Division of this office.

3. The Training Camp Division will make every effort to cooperate with other divisions in meeting the needs of the service, and requests the fullest possible cooperation in return.

War Department,
Office of the Surgeon General,
Washington, June —, 1918.

Memorandum to the Surgeon General.

1. A part of third indorsement A. G. O., June 4, 1918, to the Surgeon General, reads as follows: "In order to avoid the great cost of transportation of men from the West, Northwest, and Central West to medical training camp, Chickamauga Park, you will continue to make use of Fort Riley for training purposes. It is desired to send to that camp the greater part of men assigned to the Medical Corps who come from the Northwest, West, and Southwest section of the country."

2. In order to bring this order into the most practicable and suitable relationship with the long-cherished plan to have but one general training camp for Medical Department personnel, it is suggested that Fort Riley be used hereafter as a training camp for regimental detachments and sanitary trains only, for the following reasons:

(*a*) These units require less of strictly medical and more of field training than do others of the Medical Department.

(*b*) Because of its proximity to a divisional camp (Camp Funston), the character of the Fort Riley reservation, and the nature of existing accommodations, Fort Riley appears to be well adapted for this special training, while Camp Greenleaf, because of the presence there of the large training camp for medical officers, the contemplated establishment there of many schools for professional training, and the close relationship existing between the camp and the large general hospital there, is better fitted to train men for hospital and line of communications service.

(*c*) Regimental and train duties will not absorb more than one-third of the Medical Department enlisted personnel, and that much only while new divisions are being formed, and that the territory to feed Fort Riley will not furnish more than that proportion.

(*d*) After it becomes known that Fort Riley is training men for divisional duties only (and it can soon be made known), men sent from there for replacements will naturally tend to be assigned to such duties, and, conversely, men requested for that particular sort of replacement can be drawn from these, thus lessening the tendency to break up specially trained units of other sorts and the scattering of their personnel.

3. Men for divisional work can be best and most rapidly trained by placing them in regimental detachments and train units from the beginning and concentrating instruction efforts on their relatively simple and largely military duties. Thus it might be possible to shorten the time necessary for their training. This would allow for longer and at the same time more concentrated training of Camp Greenleaf men in hospital work and such specialties as clerking, nursing, assistance in X-ray work, operating-room work, hospital train duties, and other duties pertaining to the line of communications.

4. In order to bring about this division of labor at the earliest date, it is suggested that the following steps be taken:

(*a*) Organize at Fort Riley hereafter only regimental detachments, units of the sanitary trains, and such other units as accompany divisions in the field, such as sanitary squads.

(*b*) Assign to such units such commissioned and enlisted personnel as may hereafter be sent to Fort Riley, unless there be special and exceptional reasons for doing otherwise, in which case special orders could be requested to fit the case. Thus, if an eminent diagnostician of 55 years should go to Riley and there be deemed much more useful in an evacuation or base hospital than with a regiment or a train, orders could be asked to have him sent to Camp Greenleaf.

(*c*) Hold at Fort Riley until they are called for such organized hospital units as now exist, but form no more there.

(*d*) Order for replacement purposes officers and enlisted men now on duty at Fort Riley, M. O. T. C., who have been there for six weeks or longer and who are not needed in units now organized.

(*e*) Transfer to new divisional units officers and men who have been there less than six weeks and who are not needed to complete existing organizations.

(*f*) Leave at Fort Riley a commandant and staff and three senior instructors—one in charge of regimental detachments and sanitary squads, one in charge of field hospitals, and one in charge of ambulance companies. Leave also such numbers of assistants as may be needed by those instructors. Order all others to Camp Greenleaf and later release for other duties such as are not needed there. Inasmuch as no animal-drawn units are to be sent abroad (information from Colonel Wolfe), it is unnecessary to have a special instructor for animal groups.

(*g*) As time shows that certain property can be advantageously employed at Camp Greenleaf, have it sent there.

(Signed) P. M. ASHBURN,
Colonel, Medical Corps.

Approved:

W. C. GORGAS,
Surgeon General.

(*Memo. for department, division, and camp surgeons, and surgeons, ports of embarkation, heads of divisions, Surgeon General's Office, June 29, 1918.*)

Instruction of New Medical Officers.

1. It having been necessary to order to camps and to active duty therein many medical officers drawn directly from civil life and without training-camp experience, it becomes a matter of great importance that all such officers should be given intensive training and instruction.

2. As guides to the courses of instruction required, Special Regulations 49a, 1917, and mimeograph letter from this office dated October 3, 1917, are recalled to your attention.

3. Courses of instruction and training will therefore be instituted at once in each camp, and a training officer, himself an officer who has had training or large experience, be placed in charge of them.

4. In order that officers may first obtain the instructions which will be most helpful to them in the performance of their new duties, it is directed that the first instruction shall be in those duties which they are first called upon to perform, e. g., (*x*) the holding of sick call and (*y*) the examination of recruits, with the paper work incident thereto.

5. The next instruction in order should be that most needed for the general duties of military life, and in this should be included (*a*) setting-up exercises, (*b*) drill in the school of the soldier, in the marchings, handling the litter, the ambulance, etc., the study of (*c*) Army Regulations, of the (*d*) Manual of the Medical Department, and of (*e*) military hygiene and applied camp sanitation, including sanitary inspections.

6. Knowledge of the subjects named in the preceding paragraph is so necessary to the medical officer that instruction for at least one hour in each day of the week, except Sunday, shall be given in each of four of the subjects (*x*), (*y*), (*b*), (*c*), (*d*), (*e*), until those subjects are completed, while at least 15 minutes daily shall be given to (*a*) setting-up exercises.

This instruction shall be given in addition to routine work unless circumstances render it impossible, in which case report of the facts will be made to this office.

7. As the amount of routine work may permit of it, the amount of instruction will be increased to five, six, seven, or eight hours, as may be possible.

8. A weekly report of the schedule of instruction given in compliance with above will be submitted to this office at the end of each week. The report will also show the names of men not receiving the prescribed amount of instruction, in which case the reasons for failure to give such instruction will be noted.

9. As modified and limited by the above paragraphs and by explainable necessities, your course of instruction will be amplified and continued until the instruction outlined in Special Regulations 49a, 1917, has been completed as far as possible.

10. Every opportunity for instruction in medical subjects will be improved to the utmost, to the end that your officers may profit from the use made of the facilities and material in our excellent hospitals and may leave camp better medical men than they go there. For this purpose clinics and ward classes will be used as much as possible.

(*Letter to all division and camp surgeons and commanding officers of general and base hospitals, Surgeon General's Office, July 30, 1918.*)

Training of Understudies.

1. Commanding officers of all hospitals have been previously advised as to the desirability of training understudies in administrative work.

2. In many instances men of very superior clinical ability have been selected for training as commanding officers, which has seriously interferred with the work of the clinical divisions of this office in obtaining men competent to act as consultants and chiefs of service.

3. You are advised that it is the policy of this office to avoid, so far as possible, the assignment of men of superior clinical ability, such as those competent to act as consultants and chiefs of service, to purely administrative positions, and you will be governed accordingly.

4. The fact should, however, not be lost sight of that the Medical Department needs a large number of men who under training show themselves to be competent to act as commanding officers, and every effort should be made to obtain such men and to see that they are properly trained.

(*Cir. Letter, Surgeon General's Office, September 18, 1918.*)

Medical Officers' Training Camp, Discontinuance of.

Under date of January 29, 1919, the commanding officer, medical officers' training camp, Fort Riley, Kans., informs this office as follows:

> Report that the medical officers' training camp, Fort Riley, Kans., will be closed and all records disposed of in accordance with existing orders and regulations, on or about February 5, 1919 (the date set for closing), in compliance with second indorsement on letter from the Surgeon General of the Army, dated November 15, 1918.

(*Memo., Surgeon General's Office, February 3, 1919.*)

FINANCE AND SUPPLIES.

Surgical Needles.

1. You are advised that there is an acute shortage in the supply of surgical needles. Heretofore practically all needles used in this country have been imported. Notice has recently been received from the British Government that for the present only 5,000 gross per annum will be permitted to be exported from England to the United States. Unless other sources of supply are developed this number must suffice not only for the military service but also for the needs of the civilian population. In view of these facts it is directed that you carefully scrutinize all requisitions for surgical needles and cut down the amount approved by you for issue from the supply depots to the lowest figure possible. It is suggested that you inform the commanding officers of all hospitals under your jurisdiction of the instructions you have received from this office, and impress upon them the necessity for conserving the supply of needles.

2. Investigations are being made with a view to determining what can be done in the way of developing the manufacture of surgical needles in this country. Preliminary inquiries indicate that we may be able to obtain certain kinds from domestic manufacturers, but we can not hope to obtain deliveries in any quantity for several months at the earliest.

(*Cir. Letter, Surgeon General's Office, August 30, 1917.*)

Accountability for Medical Department Property.

1. In order to reduce the clerical work as much as possible, it is proposed to have all accountability for the Medical Department property at the camps and cantonments confined to the medical supply officer.

2. The medical supply officer will be accountable for all medical, dental, and veterinary property, except web-belt equipment in the personal possession of medical officers. The latter will render individual returns for such equipments, as required in paragraph 507*a*, M. M. D.

3. All nonexpendable property will be issued on approved requisitions by the medical supply officer, who will take memorandum receipts for it.

4. When an organization is relieved from duty at the camp the Medical Department property taken with it will be invoiced to the proper medical officer by the supply officer.

5. Nonexpendable property now held by medical officers of organizations should be invoiced by them to the medical supply officer, who, after verification of the property, will receipt therefor. The invoicing officer will then close his accountability by rendering a final return in the usual manner, dropping thereon the expendable supplies for which he may be accountable as well as the nonexpendable supplies transferred to the medical supply officer.

6. Unserviceable property should be disposed of, as provided in paragraph 678, Army Regulations, as amended by C. A. R. No. 30, July 24, 1915.

7. Returns of Medical Department property will be rendered by the medical supply officer, as provided in paragraph 507, M. M. D.

8. You are directed to institute such measures as may be necessary to impress upon all officers in the Medical Department (Medical, Dental, and Veterinary) of your division that this arrange-

ment is made for the purpose of reducing clerical work, and that responsibility for the proper use and care of Government property rests with them as heretofore.

9. If the plan herein outlined is found to be a practicable solution of the accountability problem it is the purpose of this office to extend the method by having provided a division medical supply officer, who will secure and distribute all Medical Department supplies for the division and who will be accountable for same.

10. If any serious objections to this plan should occur to you, or if you have any suggestions to make in regard thereto, please communicate them to this office as soon as possible.

(*Cir. Letter, Surgeon General's Office, October 12, 1917.*)

Requisitions and Purchases of Supplies.

1. All requisitions for supplies from divisional training camps will be prepared by the camp medical supply officers and forwarded through their respective division surgeons to this office for action. These requisitions should be prepared separately for post, field, dental, X-ray, laboratory, veterinary, and automobile supplies. Three copies are required. Division surgeons are directed to scrutinize all requisitions very carefully, with a view to eliminating all unnecessary supplies.

2. Medical supply officers at camps are authorized to make local purchases of articles on the supply tables (excepting portable dental outfits or other expensive equipment) which are not in stock and for which urgent need exists, in such quantities as will last until supplies can be had on requisition.

3. The purchase of articles not on the supply table not to exceed $100 per quarter may be made without reference to this office, but in every such instance the purchase must be covered by a certificate from the officer directing the purchase, showing the necessity therefor and stating why the articles on the supply table could not have been used for that purpose. Printing and rubber stamps are included in this allotment (Everson & Reed, New York, furnish satisfactory stamps). Purchases should be vouchered monthly in conformity with Army Regulations and the instructions on Form 330, public service voucher.

(*Cir. Letter, Surgeon General's Office, November 16, 1917.*)

Repair of Hospital Linen.

1. Recommendation is desired as to the most efficient and practicable method of repairing hospital linen. Sewing machines are being sent to all hospitals by the Supply Division. If civilian employees are desired, number desired and pay necessary should be stated.

(*Cir. Letter, Surgeon General's Office, March 23, 1918.*)

Use of Oil in Stoves in Lieu of Denatured Alcohol.

1. On account of the high cost of denatured alcohol, it has been necessary to issue oil stoves for use in the division camps in lieu of alcohol stoves.

2. It is not the intention of this office that these oil stoves issued should replace the alcohol stoves in the field equipment. When an organization is ordered to foreign duty, the oil stoves should be turned in to the camp medical supply officer and the alcohol stoves retained in the field equipment. Alcohol for these stoves will be furnished overseas as required.

(*Memo., Surgeon General's Office. Undated.*)

Bedside Tables.

1. A large supply of bedside tables is available for hospital use. If you have not already done so, you are directed to submit a requisition for a sufficient number of bedside tables to supply one table to each patient's bed.

(*Cir. Letter, Surgeon General's Office, March 27, 1918.*)

Equipment for Overseas Hospitals.

1. There has been sent you a list of medical supplies for the initial equipment of a 500-bed base hospital (overseas). Supplies which you now have should be checked against this list and articles necessary to complete a 500-bed base hospital requisitioned for, your requisition showing in proper column articles on hand.

2. The articles necessary to change the unit from 500 to 1,000 beds is known and will be supplied at the port of embarkation.

3. Quartermaster supplies as listed in paragraph 892, M. M. D., 1916, plus 50 per cent, should be requisitioned for. Five Army ranges No. 5 should be asked for instead of range No. 1.

(*Cir. Letter, Surgeon General's Office, April 30, 1918.*)

Burlap and Bags.

1. The following copy of letter from The Adjutant General of the Army is furnished for your informantion and guidance:

457.4 (Misc. Div.).
From: The Adjutant General of the Army.
To: The commanding generals of all National Guard camps, National Army cantonments, and all department commanders.
Subject: Burlap and bags.

1. Your attention is directed to a decision of the Judge Advocate General, under date of July 8, 1918, part of which is as follows: "* * * bags and burlap in which food, fuel, forage, or other articles are received at camps, cantonments, posts, or other military stations become waste material as soon as they are released from their original purpose as containers and remain so until properly reissued for other purposes. Supply officers, mess sergeants, mess officers, or other officers receiving the same are responsible for their return to the reclamation division of the local command."

2. All organization commanders will return to the quartermaster or the conservation and reclamation officer all bags used as containers for subsistence stores, grain for animals, lime, etc., and all burlap wrappings. All personnel charged with the duty of opening sacks and removing wrappings will be instructed to exercise care in order to avoid injury to materials by cutting or careless handling.

3. It is necessary that particular attention be given to this matter because the country is suffering from a shortage of burlap, which may prove critical. Feed sacks now cost the Government about 30 cents each, and 100-pound cotton flour sacks between 29 and 30 cents each. All other sacks have gone up in proportion.

4. In order to insure return of bags and burlap from organizations, all quartermasters will at once inaugurate a check system and plan for return of articles mentioned through the issue records of subsistence, forage, etc.

5. Nothing in this letter is to be construed as meaning that bags should be withheld from military training purposes, but all bags used for this purpose should be taken from the grades of lesser value, if they are available, and all bags utilized in this way should be requisitioned from the conservation and reclamation officer and the proper records kept of each issue.

(*Cir. Letter, Surgeon General's Office, July 29, 1918.*)

Milk Powder Manufacturers.

1. The attached information concerning the manufacture of milk powder, which was taken from the *New York Produce Review*, volume 44, No. 23, dated October 3, 1917, is submitted for your information.

2. In general, it is considered at this time that dry milk manufactured by the spray process is prefereable to that made by the roller process.

(*Cir. Letter, Surgeon General's Office, August 16, 1918.*)

Conservation of Whisky, Alcohol, and Narcotics.

1. Attached hereto are extracts from a report on conservation of whisky, alcohol, and narcotics prepared by the officer in charge of the dispensary at U. S. Army General Hospital No. 6, Fort McPherson, Ga., which is submitted for your information:

Report.

Beginning January 1, 1918, all prescriptions for alcohol, whisky, brandy, and narcotics were brought to the office of the chief of the medical service (officer in charge of the dispensary).

Brown's Mixture.—As a result of this checking it was soon observed that Brown's Mixture was being consumed in very large quantities. As the preparation contains opium it was thought advisable to substitute a non-narcotic cough preparation for the Brown's Mixture. This substitute has been in use now for four months and has given entire satisfaction. It costs 3 cents a gallon more than Brown's Mixture, but the patients are not getting an opiate and the temptation to tamper with the preparation is removed; moreover, the total quantity of the substitute used is less than the total amount of Brown's Mixture formerly dispensed, making the cost less and thus more than offsetting the slightly higher cost per gallon (3 cents).

Tr. opii camph.—During the month of December, 1917, it was observed that a large quantity of tr. opii camph. was being used in prescriptions. In January, 1918, these prescriptions were checked up and the conditions calling for this drug inquired into, with the result that the amount called for materially lessened. The amounts used in January, February, March, April, and May, through close checking of all prescriptions, has steadily fallen. In December, 1917, 1,000 c. c. was used for 950 patients, while in April 500 c. c. was used for 1,000 patients and May 400 c. c. for 1,000 patients.

Whisky (*spt. frumenti*).—Prescriptions for whisky also were subjected to close checking with the result of materially reducing the amounts consumed.

Ethyl alcohol.—In consulting Chart V it will be observed that the quantity of 95 per cent ethyl alcohol dispensed steadily increased from October to March, while from January to March the number of patients decreased. The prescriptions were checked from January 1 and an effort made to account for this disproportion. The surgical service required pure alcohol, and on this account it was found difficult to reduce the amount, but this did not account for the apparent discrepancy between the increasing amount expended and the decreasing number of patients in the hospital. After conference with the surgical department it was found that satisfactory substitutes could be used. On the medical service bathing and rubbing lotions were substituted. None of these substitutes are potable. The substitutes were introduced on May 1, with a striking reduction in the amount of ethyl alcohol used, falling from 70,000 c. c. for 600 patients in March to 5,000 c. c. for 1,000 patients in May, at one-third the cost.

This report is rendered in the belief that were these substitutes employed in all military hospitals and were it required to make a close checking of prescriptions for whisky and alcohol leakage would be minimized and a large saving in these preparations would result. This would not only lessen the expenditure but would materially aid conservation as well. Checking the consumption of narcotics seems equally important in preventing their improper and unnecessary use.

(*Cir. Letter, Surgeon General's Office, August 19 1918.*)

Hospital Fund.

1. It has been brought to the attention of this office that on numerous occasions unauthorized and illegal expenditures of the hospital fund have been made.

2. It should be borne in mind that under paragraph 320, Army Regulations, the commanding officer is held responsible for all expenditures not made in accordance with regulations.

3. Articles which can be obtained on requisition on any supply department must not be purchased from the hospital fund. (See par. 322, Army Regulations.)

4. Attention is invited to paragraphs 251, 254, 258, and 260, Manual for the Medical Department.

(*Cir. Letter, Surgeon General's Office, August 26, 1918.*)

Motor Transportation.

1. The following is an extract from a memorandum addressed to The Adjutant General of the Army by the Assistant Chief of Staff, Director of Operations, under date of August 20, on the subject of motor transportation which is submitted for your information.

* * * * * * * *

1. The following allowance of transportation is prescribed for all Base Hospitals:

5-passenger touring cars.	Roadsters.	Motor cycles with side cars.	Trucks.		Wagons.
			Heavy.	Light.	
1	1	4	4	2	5

(*Cir. Letter, Surgeon General's Office, September 6, 1918.*)

Monthly Report of Biological Supplies Purchased.

1. It is directed that a report be rendered this office monthly, attention Colonel Wolfe, of the amounts of the different biological supplies purchased, from whom secured, and quantities on hand. This report should be mailed promptly at the end of each month.

(*Cir. Letter, Surgeon General's Office, September 19, 1918.*)

Products of Occupational Therapy in Army Hospitals.

1. The following instructions will govern the procurement of supplies for fabrication in occupational therapy, and the disposal of the articles fabricated therefrom:

A. ARTICLES OF UTILITY IN THE OPERATION OF THE HOSPITAL.

(1) *Procurement of raw materials.*—The materials will be procured at the cost of the medical and hospital appropriations under allotments made therefrom for that purpose.

(2) *Accountability.*—The raw materials will in due course be dropped from the accountable officer's return of medical property as "expended in occupational therapy in the fabrication of" the articles produced, designating the latter by name and quantity, and the completed articles will be taken up and accounted for in their stead.

B. Articles of no Utility to the Hospital, and of no Salable Value.

(1) *Procurement of raw materials.*—The raw materials will be procured in the same manner as under A (1).

(2) *Accountability.*—They will be dropped from the accountable officer's return as "expended in occupational therapy in the fabrication of articles of no utility and of no salable value."

C. Articles of no Utility to the Hospital, but of Salable Value.

(1) *Procurement of raw materials.*—The raw materials for the fabrication of articles of this class will be procured at the cost of the hospital fund.

(2) *Accountability.*—They will be taken up on an exhibit filed as a supplement to the return of durable property, will be carried thereon as raw materials for occupational therapy until transformed into completed merchandise, and thereupon will be dropped as expended in the fabrication of the latter. The merchandise will then be taken up as completed sales products of occupational therapy and carried on hand until disposed of by sale or otherwise.

(3) *Proceeds of sales.*—Upon sale, the gross proceeds will be debited to the hospital fund. Should the gross proceeds, taken as a whole, upon all articles of this class exceed the cost of the raw materials, as ascertained from time to time, the difference or profit may be distributed as gratuities upon a fair pro rata among the patients engaged in their fabrication.

(4) *Donations.*—In special cases where the fabricated articles may have peculiar or special interest to the patient who made them, the latter may be allowed to dispose of them at his pleasure otherwise then by sale.

(*Cir. Letter, Surgeon General's Office, October 16, 1918.*)

Care of Dental Equipment and Supplies.

1. Information has been received in this office to the effect that dental equipment and supplies are not being properly cared for in some instances and that supplies, particularly burs, are not in certain cases being judiciously expended. Careful attention to the matter of the care, use, and expenditure of dental equipment and supplies is enjoined upon all officers concerned.

2. Attention is invited to the following extracts from previous instruction letters, this office:

Instruction Letter No. 1, Dental Division, S. G. O., September 11, 1917, paragraph 2: "The senior dental surgeon on duty at a post or camp will assume charge of the dental service unless otherwise directed by this office."

Dental Letter No. 2, October 16, 1917, dental property and report, paragraph 2: "The dental property in use by the dental personnel in the camp should be carried on the return of the camp medical supply officer, who will issue it on memorandum receipts to such officers as the dental surgeon may designate. All requests for dental supplies and equipment must be approved by the dental surgeon, who will be responsible for the submission of the necessary requests for the proper equipment of the dental service at the camp and for the proper care, use, and preservation of all dental equipment in use."

3. The medical supply officer is responsible for the care of dental equipment and supplies in depot.

4. All instruments, appliances, and supplies not in use should be kept in a dry place and frequently examined to guard against rust and deterioration.

5. Instruments and appliances in use should be carefully sterilized, dried, and distributed immediately after each operation. The preferable method of sterilization is, where practicable, boiling. It should be clearly understood that sterilization has not, as a rule, been accomplished where an instrument or appliance contaminated with blood or other débris has been subjected to the usual boiling process without having been previously freed, by scrubbing or other suitable process, from all adherent foreign matter. No instrument or appliance can be considered cleansed that has left upon its surface or within its mechanism particles of débris or rust.

6. Particular care should be taken to guard against rust and deterioration of hand pieces. These should be kept well oiled at all times. Hand pieces have been turned in to the New York medical supply depot for repair that have required only cleaning and oiling to restore them to a serviceable condition.

7. Although the senior dental surgeon on duty is responsible for the necessary supervision in connection with the proper care of dental instruments and supplies, every officer who has property and supplies intrusted to him is equally responsible for their proper care. This responsibility can not be delegated to an enlisted assistant.

8. It is a serious reflection on any officer to have a unit, an office, or a service that is not up to the highest standard of cleanliness and asepsis. All offices, equipment, and supplies should be maintained in such condition as to court inspection at all times.

9. The interests of the Government should always be borne in mind in the expenditure of supplies. While it is expected that all ncessary supplies will be used, all wastage and unnecessary expenditure must be prevented.

10. Unserviceable burs may frequently be readily converted into serviceable drills by use of the carborundum stone.

11. It has been suggested that dull fissure burs, plain and dentate, where the end only is affected, may be made to give additional satisfactory service by breaking off the dulled end with an ordinary pair of office pliers, and smoothing the new end with a stone.

12. In view of the acute shortage of burs, it is directed that all unserviceable burs, the blades of which are not broken, be turned in to the medical supply officer, who will hold same pending further instructions from this office.

13. Adequate care of all unserviceable property on hand should be taken until final disposition of same is made.

14. It has been found that the wear of dental engine cords is greatly reduced in many cases by reducing the tension on them. Tightly stretched cords will wear out very rapidly, while, on the contrary, a cord with only sufficient tension to grip the pulleys will give the maximum length of service.

15. Semi-weekly inspections will be made by the camp dental surgeon, and daily inspection by the officers in charge of the dental units to ascertain that the proper action is being taken in connection with the above instructions.

(*Cir. Letter, Surgeon General's Office, November 6, 1918.*)

Cost of Material Used in Surgical Operations and Dressings.

1. The following comparative statement, taken from reports received in this office for the month of November, 1918, in compliance with Supply Letter No. 28, is furnished for the information of all concerned:

Base hospital.	Number of operations.	Cost of operation.	
	November.	November.	August.
Camp Dodge, Iowa	170	$0.1301	No report.
Camp Logan, Tex.	337	.1712	No report.
Camp Gordon, Ga.	271	.2765	$0.4870
Camp Lee, Va.	359	.2810	.4581
Camp Joseph E. Johnston, Fla.	115	.3328	.5873
Camp Beauregard, La.	103	.3524	[1] No report.
Camp Custer, Mich.	149	.5475	.5826
Camp McClellan, Ala.	260	.5820	.6853
Camp Grant, Ill.	183	.5969	.9612
Camp Sheridan, Ala.	225	.6603	.4678
Camp Sherman, Ohio	382	.6740	.2119
Camp Pike, Ark.	403	.7741	No report.
Camp Greene, N. C.	147	.9372	3.0118
Camp Devens, Mass.	227	1.0116	1.2372
Camp Travis, Tex.	171	1.2221	.5070
Camp Jackson, S. C.	345	1.2946	No report.
Camp Wadsworth, S. C.	42	1.4316	No report.
Camp Meade, Md.	249	1.8836	1.1945
Camp Hancock, Ga.	254	1.9397	1.2870
Camp Taylor, Ky.	261	2.0455	No report.
Camp MacArthur, Tex.	131	2.2487	[2] No report.
Camp Cody, N. Mex.	72	2.4377	1.4233
Camp Bowie, Tex.	74	No report.	No report.
Camp Dix, N. J.	138	No report.	No report.
Camp Funston (Fort Riley), Kans.	No report.	No report.	1.1500
Camp Kearney, Calif.	No report.	No report.	2.4430
Camp Lewis, Wash.	351	No report.	No report.
Camp Sevier, S. C.	267	No report.	3.4333
Camp Shelby, Miss.	109	No report.	.6300
Camp Upton, N. Y.	191	No report.	No report.
Camp Wheeler, Ga.	102	No report.	No report.

[1] Three items, gauze, catgut, and ether, only reported.
[2] No catgut or ether reported.

Average cost per operation, August, 1918	$1.1389
Average cost per operation, November, 1918	.9923
Average saving per operation, November over August	.1466

In the 22 hospitals listed above as reporting, 4,856 operations were performed in November, which at an average saving of $0.1466 makes a saving of $711.88 over the cost of operations in August, 1918, for this number.

The reports required by Supply Letter No. 26 should be rendered promptly at the end of the month, attention Division of Surgery, and should include all gauze, bandages, cotton, rubber gloves, adhesive plaster, and ether actually expended in the surgical service.

(*Cir. Letter No. 7, Surgeon General's Office, January 4, 1919.*)

Officers' Messes and Misuse of Hospital Funds.

1. The sale of foods or other property belonging to the hospital fund to officers for the use of their messes or of their families is not authorized. (See A. R. 1247.)

2. The use of the hospital fund for financing the messes of duty officers is unauthorized and an abuse of the trust for which such funds are held. (See A. R. 1462.)

3. The establishment in hospital buildings of messes for duty officers is forbidden by A. R. 1470.

4. The purchase with hospital fund of articles procurable on requisition from any supply department, except as indicated in A. R. 322, is forbidden.

5. Instances have come to the attention of the department where the regulations cited have been violated. The messes of duty officers at hospitals will have no connection or dealing with the hospital messes or the hospital funds.

(*Cir. Letter No. 52, Surgeon General's Office, January 27, 1919.*)

Acriflavine Preparation.

1. Under separate cover 2 ounces of acriflavine is being forwarded you. This preparation has been used with great success by the members of the American Expeditionary Force for the treatment of acute gonorrhea.

2. It is desired that the preparation be given a thorough trial in your hospital and a full report be forwarded this office, attention Section of Urology.

3. Two reprints from the *Journal of Urology*, Volume II, August, 1918, "Acriflavine in the Treatment of Gonorrhea—an Experimental and Clinical Study," by Drs. E. G. Davis and B. E. Harrell, are inclosed.

(*Cir. Letter No. 61, Surgeon General's Office, January 30, 1919.*)

Motor Transportation.

1. The following is an extract of letter from Chief, Motor Transport Corps, dated January 27, 1919:

[Extract.]

Many instances have come to the attention of this office where officers of the Medical Corps have incurred certain expenses in connection with the maintenance and operation of motor vehicles without requisition upon the Motor Transport Corps.

2. Attention is invited to paragraph 4*b*, G. O. 75, W. D., August 15, 1918.

3. All matters pertaining to maintenance of motor vehicle in the hands of the Medical Department will in the future be taken up with the local motor transport officer.

(*Cir. Letter No. 79, Surgeon General's Office, February 10, 1919.*)

Medical Supplies.

1. It is requested that a detailed report be submitted to this office, attention Finance and Supply Division, covering every failure to obtain or serious delay in obtaining medical, dental, or veterinary supplies. This report should show the cause of the difficulty, and should indicate measures to be taken to obviate such difficulty in the future.

(*Cir. Letter No. 81, Surgeon General's Office, February 10, 1919.*)

Procurement of Coal, Coke, and Wood.

The following is an extract of a letter from the Director of the Purchase, Storage, and Traffic Division:

1. Your attention is invited to Purchase and Storage Notice No. 39, January 23, 1919, copy attached.

2. It will be noted that this notice contains necessary instructions relative to procurement of coal, coke, and wood for the balance of the present fiscal year and for the fiscal year 1920.

3. It is requested that the necessary action be taken whereby the officers under your jurisdiction who are in any way concerned with the subject matter of this notice be given proper instructions.

4. Acknowledgment addressed to the raw materials division of this office is requested.

War Department,
Purchase, Storage and Traffic Division,
Office of the Director of Purchase and Storage,
Washington, January 23, 1919.

Purchase and Storage.
Notice No. 39.

Subject: Procurement of coal, coke, and wood.

1. Under General Orders, No. 8 (Section VIII), 23 (Section IV) and 53 (Section II), W. D. 1918, Supply Circular No. 91, Purchase, Storage and Traffic Division, General Staff, Office Order No. 176 and Notice No. 210, Office of the Quartermaster General of the Army, and Purchase and Storage Notices Nos. 1 and 19 (dated October 19 and 28, 1918), the raw materials division in the Office of the Director of Purchase is charged with the function of procuring all fuel required for all corps and departments of the Army.

2. Effective from the date thereof, camp and post supply officers and quartermasters or other supply officers, wherever stationed, performing similar functions will obtain any or all of the foregoing enumerated commodities, hereinafter referred to under the generic term "Fuel," required for the camp, cantonment, Army post, arsenal, or station where they are on duty, by making requisitions on the zone supply officer charged with the procurement of supplies for the zone within which such camp, cantonment, Army post, arsenal, or station is situated. These requisitions will include the requirements of the Quartermaster Corps, Medical Department, Ordnance Department, Signal Corps, Engineer Corps, Motor Transport Corps, Air Service, Chemical Warfare Service, etc.

3. At posts, arsenals, or other stations where no supply officer is stationed officers charged with the procurement of fuel for such stations will forward requisitions direct to the zone supply officer of the zone in which such post, arsenal, or other station is situated.

4. Requisitions will state the kinds and quantities of fuel required and specifically state the time or times within which deliveries are required.

5. Requisitions will be made out in quadruplicate, on Q. M. C. Form No. 160, one copy of which will be retained for the records of the office from which the requisition emanates and three copies will be forwarded to the zone supply officer.

6. Upon receipt of a requisition which can not be filled from stock under his jurisdiction, the zone supply officer will retain one copy, and forward the other two copies to the Office of the Director of Storage, domestic distribution division, Washington, which will order the requisition filled from stock, if there be any available; otherwise, it will forward the requisition to the requirements division, Office of the Director of Purchase and Storage, for authorization of purchase.

7. All purchase authorizations for fuel will be issued to the fuel branch, raw materials division, Office of the Director of Purchase, which, acting through purchasing and contracting officers designated to act for that branch, will purchase and contract for all fuel, in accordance with Notice No. 189, Office of the Quartermaster General.

8. A copy of each purchase order or contract will be sent by the chief of the fuel branch to the zone supply officer of the zone within which is located the camp, cantonment, Army post, arsenal, or station to which the fuel covered by such purchase order or contract is to be delivered.

9. Zone supply officers will follow production, make inspection, issue shipping instructions and bills of lading, and keep all other necessary records in connection with all purchases made within their respective zones by the fuel branch, raw materials division, Office of the Director of Purchase, as hereinbefore provided. Payment for these purchases will be arranged for by the zone finance officer.

10. Emergency purchases of fuel may be made by supply officers at camps, forts, posts, and other military stations under the general provisions of Notice No. 189, paragraph 3*c*, Office of Quartermaster General of the Army. It is important, on account of existing market conditions, that the purchases be kept down to a minimum, and that as far as possible requisitions be submitted in advance of actual needs in the manner above prescribed. Supply officers making such purchases will prepare a statement in triplicate of the same, one copy of which will be retained, one copy forwarded to the zone supply officer, and one copy forwarded to the raw materials division, Office of the Director of Purchase, Washington.

11. It is proposed that the appropriations covering the procurement of fuel for all bureaus and corps of the War Department for the fiscal year 1920 be made to the Quartermaster Corps, so that in the procurement or issuing of fuel to other bureaus or corps of the War Department no transfer of funds will be involved.

12. Beginning January 1, 1919, the procurement of bituminous coal and coke, which has heretofore been allocated through the United States Fuel Administration, upon request from this office, has been delegated to the zone supply officers of the various zones for all posts, camps, and stations. This method of procurement will be continued in effect for the fourth quarter of the current fiscal year, and zone supply officers will be responsible for the supply of bituminous coal and coke required at all posts, camps, and stations within their respective zones. Present advices indicate that the allocation of anthracite coal, through the general committee of anthracite operators acting for the United States Fuel Administration, will be discontinued on and after April 1, 1919. Zone supply officers will therefore be charged with the procurement of anthracite coal as well as bituminous coal and coke for the fourth quarter of the fiscal year 1919. In no case, however, will anthracite coal be procured for any post or station west of Pittsburgh or south of Washington without first obtaining the approval of the raw materials division, which approval will not be granted unless such post or station is equipped with heating apparatus adapted to the burning

of anthracite coal only and the use of bituminous will result in insufficient heat or excessive cleaning of apparatus, or in other cases where urgent and cogent reasons exist which must be fully explained.

13. Beginning with the requirements for the fiscal year 1920, all fuel, including anthracite and bituminous coal, coke, and wood, will be contracted for by the raw materials division, Office of the Director of Purchase, as indicated by paragraph 7 herein.

14. In order that advertisement may be issued and contracts made prior to the beginning of the next fiscal year, all quartermasters, camp supply officers, or other supply officers are directed to submit to their respective zone supply officers, not later than March 1, 1919, an estimate of the quantities of coal, coke, and wood required monthly during the fiscal year 1920 at their respective posts, camps, and stations; and zone supply officers are directed to forward these estimates from all stations in their respective zones, by one letter of transmittal, to the domestic distribution division, Office of the Director of Storage, so as to be received not later than March 15, 1919. Blank forms for preparation of these estimates will be forwarded not later than February 10 to the respective zone supply officers, who will in turn furnish the necessary number of the forms to the quartermaster or supply officer of each station in their respective zones.

15. Each quartermaster or supply officer submitting estimates as directed above will attach thereto a statement showing the names and addresses of all persons and firms who have had contracts for furnishing each commodity at his station during the past three years and also the names and addresses of other prospective bidders, and in case any of these persons or firms have defaulted on any contract it should be so noted.

16. In this connection, attention is invited to the fact that as the raw materials division is charged with the procurement of all fuel required by the Army, it is incumbent upon each zone supply officer to see that estimates are submitted as directed above, covering each camp, post, arsenal, or other station within his zone, regardless of whether such requirements have heretofore been provided by the Ordnance Department or any department or bureau of the War Department other than the Quartermaster Corps.

(*Cir. Letter No. 88, Surgeon General's Office, February 14, 1919.*)

Pullman Blankets.

1. The attention of all concerned is invited to the following copy of letter received from the assistant to the superintendent of car service, Pullman car lines, relative to the misappropriation of blankets from Pullman cars:

Subject: Shortage of equipment, car *Favorita.*

CHIEF, INLAND TRAFFIC SERVICE,
Washington.

DEAR SIR: I beg to advise that on trip of car *Favorita*, February 20, Newport News to Azalea, N. C., 19 blankets were removed and used to wrap up patients in litters when removed from the cars to the hospital at Azalea and were not returned.

It has been noted that other cars used with sick and wounded are returning to New York and Newport News short of equipment, although definite data as to the number of blankets or point at which they are removed is not available.

The necessity of furnishing sufficient blankets on cars used with sick and wounded is recognized, and difficulty exists in maintaining supply on the cars, as the very heavy loss of blankets from cars during period of the war has exhausted our reserve stock.

It is suggested that instructions be given to return to the nearest Pullman representatives any Pullman blankets the various hospitals may have, and if the name and address of the nearest Pullman representative is not known, I will be glad to give you specific information in such cases.

Yours truly,

(Signed.) C. W. HENRY.

2. The commanding officers of all general, base, and other hospitals will institute a search for Pullman blankets, and any such blankets found at their hospital will be promptly returned to the nearest Pullman representative.

3. Prompt action is desired.

(*Cir. Letter No. 127, Surgeon General's Office, March 6, 1919.*)

Surgical Dressings.

1. Attention is invited to the following list of dressings and appliances which are on hand in excess.

2. It is desired that requisition be made promptly for such of these as are desired for use at your station. Requisition should be made in the usual manner.

Bags, weights; bandages, gauze, roller, assorted, 6 dozen in box; bandages, many tailed; bandages, muslin, bias, 4-inch; bandages, muslin, bias, 5-inch (5 yards long); bandages, muslin, bias, 6-inch; bandages, muslin, triangular; bandages, flannel, 3-inch roller; bandages, scultetus; bandages, plaster of Paris, 3-inch, in individual packets; bands, elbow traction; cotton, absorbent, in rolls; gauze, plain; gauze, rolls; gauze wipes, 2 by 2; gauze wipes, 4 by 4; jackets, pneumonia; pads, absorbent; pads, oakum, size 2; pads, dressing, T-2, S-2; pads, dressing, T-2, S-1; pads, dressing, T-1, S-2; pads, oakum, size 1; pads, sphagnum moss, size 1; pads, sphagnum moss, size 2; parcels, red label, front line; parcels, white label, front line; parcels, blue label, front line; rings, heel; supports, leg; supports, perineal; outing flannel; pads, sterile, dressing, 8 by 4.

Cir. Letter No. 135, Surgeon General's Office, March 12, 1919..

Allotments Given by Surgeon General's Office.

1. All allotments made by the Surgeon General's Office for the purchase of orthopedic and reconstruction equipment, the emergency purchase of hospital supplies, etc., are given to the commanding officer of the hospital in all cases, and the purchases may be made by the commanding officer or any assistant designated by him. It is suggested, however, that the purchases be made by the supply officer at the hospital who will be best acquainted with the methods of purchase and the preparation of vouchers.

2. Emergency purchases, when the need is very urgent, may be made in open market and the order may be either oral or written. All oral orders should be later confirmed by written orders, however, to avoid possible confusion and delay in the payment of bills.

3. Whenever time permits, it is important that competitive bids be secured and the award made to the lowest bidder who proposes to furnish a satisfactory article. In this connection, attention is invited to the attached copy of letter from the Director of Purchase, Storage and Traffic, dated March 12, 1919.

4. Unless instructions to the contrary are received, vouchers covering all purchases made under Medical Department allotments should be forwarded to the Finance and Supply Division of this office. These vouchers should be prepared strictly in accordance with paragraphs 633, 634, Army Regulations.

War Department,
Purchase, Storage and Traffic Division, General Staff,
Washington.

From: The Director of Purchase, Storage and Traffic.
To: Surgeon General, through liaison officer.
Subject: Public advertising for bids.

1. As it is desired that all Army purchasing be reestablished on a peace basis as soon as conditions permit, and as it is the intention to rescind at an early date G. O. No. 49, W. D., 1917, which authorizes purchasing without resort to advertising for bids, bureau chiefs purchasing supplies and equipment for the Army and the Director of Purchase and Storage are directed to modify, their purchasing methods in order to conform with existing statutes and regulations when their purchasing methods do not so conform.

2. The important statutes covering Army purchasing are as follows:

All purchases and contracts for supplies or services in any departments of the Government, except for personal services, shall be made by advertisement a sufficient time previously for proposals respecting the same when the public exigencies do not require the immediate delivery of the articles or performance of the service. When immediate delivery or performance is required by public exigency, the articles or service required may be procured by open-market purchase or contract at the places and in the manner in which such articles are usually bought and sold or such services engaged between individuals. (Sec. 3709, R. S.)

Hereafter the purchase of supplies and the procurement of services for all branches of the Army may be made in the open market in the manner common among business men when the aggregate of the amount required does not exceed $500; but every such purchase exceeding $100 shall be promptly reported to the Secretary of War for approval under such regulations as he may prescribe. (Act of June 12, 1906, 34 Stat. 258.)

3. In accordance with the foregoing statutes, public advertising will be resorted to for all ordinary purchases of supplies and nonpersonal services amounting to over $500 unless the appropriation acts under which the bureaus are operating specify a sum greater or less than this amount.

4. Under prescribed regulations public advertisement may be done by insertions in the newspapers, posters, circular proposals, or by handbills, but when handbills are resorted to they should be circulated to such an extent as to render it probable that a large number of persons engaged in the business of furnishing the supplies desired have been afforded an opportunity to compete for the contract which is to be let. Use shall be made of the Official Bulletin of the War Department for the purpose of advertising for bids, and to this end the chiefs of bureaus, and the Director of Purchase and Storage are directed to send to the purchase branch, Purchase, Storage and Traffic Division of the General Staff, immediately upon issue, all requests for bids issued by them, whether in circular proposal or letter form, in order that the proposed purchase may be announced in the Official Bulletin. The attention of all procuring agencies is also invited to paragraph 10 of Supply Circular 75, W. D., 1918, which requires that the various bureaus maintain information desks where information in regard to prospective purchases may be obtained by the public.

5. As a general rule it may be assumed that the emergency which was a result of war conditions no longer exists and open market purchases without advertising or competition should be resorted to only when necessary to satisfy cables from abroad for supplies, the demand for which has not been foreseen, or to meet other extremely exceptional conditions.

By direction of the Director of Purchase, Storage and Traffic.

(Signed.) HERBERT H. LEHMAN,
Lieutenant Colonel, General Staff,
Assistant Director of Purchase, Storage and Traffic.

(*Cir. Letter No. 157, Surgeon General's Office, March 25, 1919.*)

Procurement of biological supplies.

1. The following instructions governing the procurement of biological products should be carefully observed.

2. The following maximum and minimum stocks will be kept on hand at your station for each 3,000 men. Where the size of the command is less than 3,000 men the amount of serum listed under "minimum" should be kept:

	Minimum.	Maximum.
Human:		
Diphtheria antitoxin, 10,000 units	1 vial	2 vials.
Diphtheria antitoxin, 1,000 units	2 vials	3 vigls.
Tetanus antitoxin, 1,500 units	1 vial	2 vials.
Antipneumococcic serum 100 c. c. vials	2 vials	5 vials.
Antimeningitis serum, 15 c. c. vials	1 vial	5 vials.
Antistreptococcic serum, 20 c. c. vials	do	2 vials.
Veterinary:		
Tetanus antitoxin, 1,500 units	do	3 vials.
Tetanus antitoxin, 5,000 units	do	2 vials.

3. These supplies will be procured by direct requisition upon this office, if necessary by telegram. Sera can usually be supplied within 24 hours from the date of the receipt of requisition. This office will be informed immediately upon receipt of such supplies on the form which will be sent you when each order is placed. Vouchers for all products ordered by this office will be prepared in this office.

4. In emergency purchases, paragraph 476, Manual for the Medical Department, 1916, will govern.

5. Attention is invited to paragraph 6, of Supply Letters 1–29, Medical Department, United States Army, and to Circular Letter No. 134, published by this office under date of March 12, 1919, regarding products furnished by the Army Medical School.

6. Time expired biological products will be disposed of in accordance with paragraph 6, subheading (*c*), of Supply Letters 1–29.

7. Biological supplies not included in the list of stock to be kept on hand are to be procured and vouchered as outlined in paragraph 3 of this letter.

8. Sera will not be supplied in syringes if they can be obtained in vials. You are directed to specify vial containers for all products excepting smallpox vaccine, which will be furnished in capillary tubes.

9. The monthly reports required by letter from this office dated September 19, 1918, will be rendered promptly at the end of each month.

(*Cir. Letter No. 158, Surgeon General's Office, March 27, 1919.*)

Motor Ambulance Supply Depot, Abandonment of.

Under date of April 8, 1919, the officer in charge, motor ambulance supply depot, Louisville, Ky., informs the Surgeon General that the "depot is closed this date. All property has been disposed of; enlisted personnel discharged and commissioned personnel transferred. Request that no more communications be addressed to this office."

(*Memo., Surgeon General's Office, April 12, 1919.*)

Purchase of Food for Hospital Messes (par. 1220, A. R., C. A. R. 86).

1. Under date of the 12th instant, the Secretary of War instructed this office as follows:

> Your request that provisions of subparagraph (*f*), paragraph 1220, A. R., be not made to apply to hospital messes is disapproved. It is believed the provisions of this paragraph will be applicable to all messes when the new rationing system is well organized and put in operation by the Quartermaster Corps.

Until July 1, 1919, in cases where any food article is required for immediate use and the same is not in stock and can not be secured without delay by the quartermaster, the surgeon of a hospital is authorized to make the purchase in the open market. He shall transmit the bill to the quartermaster for settlement with a certificate to the effect that the article was purchased in the open market because it was not in stock and could not be procured by the quartermaster without delay which might interfere seriously with providing proper nourishment for a patient.

The provisions of subparagraph (*a*), paragraph 1220, A. R. (changed by C. A. R. No. 86, W. D., 1919), do not modify the provisions of paragraph 1212, A. R. (changed by C. A. R. No. 66, W. D., 1917), and commutation of rations as provided by the latter paragraph will be paid to the surgeons of hospitals as heretofore.

2. These instructions will be fully observed without evasion.

3. All contrary instructions heretofore issued by this office will be disregarded.

(*Cir. Letter No. 186, Surgeon General's Office, April 26, 1919.*)

Finance and Supplies, Correspondence On.

It is noted that correspondence relating to supply and finance is frequently conducted between the various divisions of this office and the Purchase, Storage and Traffic Division of the General Staff.

All such matters should pass through the Finance and Supply Division as that division is the liaison between this office and the Purchase, Storage and Traffic Division of the General Staff.

(*Memo., Surgeon General's Office, April 29, 1919.*)

Monthly Report of Supplies.

1. Paragraph 7, Supply Letter No. 26, Office of the Surgeon General, dated June 29, 1918, is rescinded and the monthly report of supplies expended prescribed thereby will no longer be made.

(*Cir. Letter No. 194, Surgeon General's Office, May 1, 1919.*)

Financial Activities of Army Hospitals.

1. A great number of irregularities respecting these activities having been reported by inspectors, the Secretary of War directs that medical officers be instructed to give greater attention to their administrative and supervisory duties respecting the same.

2. Their particular notice is called to the regulations governing hospital (post) exchanges, hospital messes, hospital funds, other special funds (if any), and the care of patients' property. The good reputation of the Medical Department depends in no small degree upon the proper management of these activities, and habitual or continual inefficiency therein will bring well-merited reproach upon it. Medical officers are therefore enjoined not only to make themselves thoroughly familiar with the letter of the regulations bearing upon these matters, but to enforce them in spirit as well as in letter, with such additional measures of precaution for particular occasions as may be indicated by common sense and sound judgment.

(*Cir. Letter No. 237, Surgeon General's Office, June 16, 1919.*)

Procedure Regarding Artificial Limbs, Biologicals, Books, etc.

1. In order to simplify the mode of procedure and to clear up confusion now existing in the minds of receiving officers, the following is published for the information and guidance of all concerned:

2. Artificial limbs and other prosthetic appliances for disabled soldiers, from whatever source received, will be taken up on the stock cards of the local supply officer. When fitted, the individual receiving the limb or appliance will sign formal receipt for it, upon receipt of which the local supply officer will drop the article from his stock card as finally disposed of. The receipt will be held pending final action by the zone or other auditor.

3. Salvarsan will hereafter be accompanied by the necessary shipping tickets from the officer in charge of the proper depot, when shipped from depot stock or from this office, when shipped direct from the manufacturer. The customary routine regarding receipt, storage, and issue will be followed as in the case of other medicinal agents.

4. Biologicals, being essentially perishable, and requiring care in storage, especially that they be kept as nearly as possible at a uniform temperature of 50° F., will be sent direct to the surgeon, if a post hospital, or to the commanding officer, if a camp, base, or general hospital, who will be held responsible for the proper care and safeguarding of these products and that excessive quantities are not carried in stock. Since these supplies can be had on telegraphic request, the quantities prescribed in S. G. O. Circular Letter No. 158, March 27, 1919, should not be exceeded.

The customary acknowledgment of receipt of these products will be made and further accountability will cease. In case the supplies are received direct from the Army Medical School, formal acknowledgment will be rendered thereto instead of to this office.

5. Books will generally be mailed direct from the publisher to the hospital or individual intended and shipping tickets will be furnished from this office. They will be taken up on the stock cards of the local supply officer and the customary routine observed as in the case of other nonexpendable articles.

6. Journals will be mailed direct from publishers to hospitals and individuals. Reprints will be mailed from this office. Formal acknowledgment of both will be made to this office. The officer to whose care they are intrusted will take adequate measures to preserve them from loss or damage and to keep the files intact. Further accountability will not obtain.

7. Spectacles will be taken up on the proper stock cards and dropped in the same manner as other individual equipment issued to the soldier.

(*Cir. Letter No. 268, Surgeon General's Office, July 24, 1919.*)

Reimbursement for Meals Furnished Nonmilitary Personnel.

1. If, under existing authorizations, meals are furnished to nonmilitary personnel, such as those connected with Red Cross convalescent houses, the price charged for them should be sufficient to reimburse the Government for all expenses incident thereto. Account should be taken of the cost of preparing, cooking, and serving the food in addition to the cost of the ration.

(*Cir. Letter No. 283, Surgeon General's Office, August 15, 1919.*)

Textbooks for Student Nurses.

1. Hereafter such authorized textbooks as are required by student nurses of the Army Training School of Nursing for their personal use will be issued to them individually, proper notation made on appointment form, and dropped from the returns of the accountable officer. They will not be taken up again until the student nurse is finally separated from the School of Nursing by graduation, discharge, or resignation.

2. On separation from the service as indicated, the books will be returned to the property officer from whom received or turned in to the property officer of the nearest hospital and notation thereof made on the original appointment form by a commissioned medical officer who has knowledge of the facts.

3. The cost of such books as may be lost or damaged otherwise than through fair wear and tear will be deducted from the final pay of such nurses.

(*Cir. Letter No. 301, Surgeon General's Office, September 15, 1919.*)

Kitchen Equipment.

1. With the discontinuance of some of the general hospitals, a considerable quantity of valuable and serviceable kitchen equipment is becoming available for issue elsewhere. This equipment consists of:

Butchers' blocks; tables; meat blocks; ice breakers and cutters; ice-cream machinery; paring machines; vegetable peelers; meat cutters, slicers, and choppers; bread cutters; steel ranges; refrigerators of various sizes; fish tables; meat tables; worktables, steel and wood; cooks' tables of various sizes; tea and coffee urns; and many other labor-saving devices.

2. In order that this surplus equipment may be disposed of to the best advantage, it is desired that commanding officers of general and base hospitals submit lists to this office of such equipment as is needed or can be used advantageously in the kitchens and dining rooms of their respective hospitals. Upon receipt of these lists issuance will be made from the available supply.

(*Cir. Letter No. 320, Surgeon General's Office, October 7, 1919.*)

Dosage of Medicine.

1. The following instructions are quoted for the information and guidance of all concerned:

> The dosage of arseni et hydrargyri iodidi liquor given on page 268, edition 1912, Mason's Handbook, and on page 295, edition 1918, same book, will be corrected without delay to read: "Dose, one-fifth to one-half cubic centimeter."

(*Cir. Letter No. 340, Surgeon General's Office, November 3, 1919.*)

Reports of Open-Market Purchases.

1. The following is a copy of letter from The Adjutant General of the Army, dated December 15, 1919:

> Your attention is invited to the fact that until the rescission of Section I, G. O., No. 49, War Department, 1917, by Section I of G. O., No. 119, War Department, 1919, the provisions of paragraph 554, Army Regulations, were suspended. The rescission of Section I, G. O., No. 49, War Department, 1917, has the effect of again placing the requirements of paragraph 554, Army Regulations, in effect. You will therefore govern yourself accordingly.

2. Reports will be made to Finance and Supply Division, this office, on the last day of each month on the prescribed form (W. D. Standard Form No. 14) of all purchases exceeding $100 of the following-named class of supplies:

(*a*) Artificial limbs, trusses, and other appliances for disabled soldiers and for the treatment of individual patients, spectacles, and artificial eyes.

(*b*) Museum specimens and supplies for their preparation, preservation, and display.

(*c*) Gas, electricity, and other fuel or power for the operation of laboratory apparatus.

(*d*) Books, periodicals, reprints, blank forms, etc., for the Library of the Surgeon General and for distribution.

(*e*) Hospital laundry and similar services.

(*f*) Arsphenamine products.

(*g*) Biologicals, laboratory animals, and feed therefor.

(*Cir. Letter No. 371, Surgeon General's Office, December 30, 1919.*)

SUPPLY LETTERS NOS. 1 TO 29, INCLUSIVE, MEDICAL DEPARTMENT, UNITED STATES ARMY.

War Department,
Office of the Surgeon General,
Washington, December 5, 1917.

The following instructions are supplemental to the Manual for Medical Department, and are not intended to supersede the latter. Attention is invited to paragraph 477 et seq., M. M. D., 1916, with reference to the preparation of requisitions.

W. C. Gorgas,
Surgeon General.

[Supply Letters Nos. 1 to 23, inclusive, consolidated and revised.]

1. ACCOUNTABILITY.

(*a*) *For medical and dental property.*—A number of instances have recently occurred in which officers accountable for medical and dental supplies have left their property on changing station without transferring it to another officer. This practice has been found to result almost invariably in serious complications in the settlement of the property returns of the accounting officer. Attention is therefore called to the urgent necessity for the transfer of all property as contemplated in paragraph 659, A. R., before the accountable officer is separated from it.

(*b*) *Returns of medical property.*—The attention of all medical officers is invited to the fact that a great amount of extra and seemingly unnecessary work has been caused in the examination of returns of medical property, due to the following causes:

Failure to forward promptly invoices of property issued or receipts for property received, as provided by paragraph 496, M. M. D., 1916.

Failure to properly number all vouchers pertaining to the return.

Failure to arrange articles on returns and vouchers in the same order and under the same name as shown in the Manual for the Medical Department. In this connection attention is invited to paragraph 475, M. M. D., which provides that "in preparing returns, requisitions, invoices, and receipts pertaining to medical and hospital supplies, the nomenclature, order of entry, classification, and weights and measures of the supply table will be followed."

Failure of medical officers to retain accountability for litters with slings which are in the hands of company commanders, as indicated by footnote 3, page 254, M. M. D.

Failure of medical officers of militia to properly transfer to the property and disbursing officer of the respective States, or otherwise account by proper voucher for the property in possession of the organization on muster out.

Failure to show shortage in units on the slips of the return carrying such units.

Failure of officers signing receipts for medical property who are not themselves accountable officers to follow their signatures with the words, "For and in the absence of ...." (naming the accountable officer).

Failure to check over units carefully before receipting for them. Officers must realize that they will be held accountable for units as a whole when receipted for without remark. In this connection attention is invited to paragraph 498, M. M. D. Attention is also especially invited to paragraphs 502, 507, and 512, M. M. D.

Failure to give the name of the issuing officer on the brief of receipt for medical property.

Failure to leave blank on briefs of invoices the lines intended for the name and rank of the officer to whom medical property is issued. (The two lower lines for station or command should, however, be filled in by the issuing officer.)

(*c*) Departmental and divisional surgeons should take such steps as are necessary to enforce the requirements of the Manual for the Medical Department, 1916, relative to the care and returns of medical property.

(*d*) Officers making returns of medical property should in all cases state on Form 17 the name of the organization or to the post to which the return pertains.

(*e*) Both returns of medical property and vouchers pertaining thereto should be signed with pen in a legible manner by the accountable officer. In this connection attention is invited to the provisions of paragraph 779, Army Regulations, 1913. In case of signatures which are not clearly legible, the officer's name should be typewritten in addition to the signature.

(*f*) The supply officer on duty with ambulance sections and with field hospital sections should be accountable for all property in those sections, whether medical, quartermaster, or ordnance. This property should be held by organization commanders on memorandum receipt.

(*g*) The supply officers of the respective sections should secure the necessary personnel from that assigned to duty with the headquarters of those sections.

2. ACID (PICRIC) AND BENZINE.

(*a*) Under the rules promulgated by the Interstate Commerce Commission for the transportation of explosives and other dangerous articles, picric acid "dry" is classed as a "high explosive." When "wet" with 20 per cent water, it is still so dangerous that it can only be shipped under special restrictions and at a prohibitive cost. It should not be requested, except under the most extreme emergency, and in case it is obtainable locally authority for local purchase should be requested.

(*b*) Benzine, from its inflammable nature, is also dangerous, and should be procured locally if possible.

3. AMBULANCE COMPANY EQUIPMENT.

The quantities noted after the following items are authorized for ambulance companies at maximum strength:

Foot powder	tins	150
Iodine swabs	boxes	100
Spiritus ammonii aromaticus	bottles	18

4. AMBULANCES (MOTOR).

The serial number of each ambulance should be indicated in all correspondence relative to motor ambulances, including vouchers.

(*a*) *Disposal of unserviceable spare parts, etc.*—During active field service, or conditions simulating thereto, the following rules will govern the disposal of unserviceable spare parts, accessories, etc., pertaining to motor vehicles of the Medical Department:

(1) Spare parts and accessories worn out in the service which have no salable value may be disposed of in such manner and under such regulations as the department surgeon or division surgeon may direct.

(2) Bolts, cap screws, cement, cotter pins, cotton waste, emery cloth, gasoline, grease, lamp cord, mats, oils, rivets, sandpaper, solder, tape, washers, and wood screws may be dropped on the certificate of the responsible officer showing in what manner they were expended.

(3) Articles which have a salable value, or which may be salvaged, and the parts used in repair of other machines will be turned in to the nearest machine shop for such use as can be made of them. The acknowledgment of the receiving officer will be accepted as relieving the responsible officer from further accountability therefor.

(4) Unserviceable tires and inner tubes will be turned in to the Louisville depot.

(*b*) *Nonskid tires.*—As the chains with which motor ambulances are equipped can not be operated on nonskid tires successfully, only plain-tread tires are authorized and will be issued in the future.

(*c*) *Oil and gasoline.*—The scanning of the reports of motor ambulances (Q. M. C. Form 417) brings to light the fact that high gasoline and oil consumption per mile, without apparent cause, is general throughout the service.

Officers responsible for motor ambulances should take steps to check any and all waste of gasoline and oil, and see that the men charged with the care and operation of those vehicles be instructed to exercise care in this respect, in order that the cost per mile may be reduced and maintained at an economic figure.

Unnecessary "idling" (i. e., running of the motor while the car stands still) is a source of gasoline waste often overlooked by men not properly trained, and ignored by the careless and indifferent.

The operation of vehicles on soft tires is not only the greatest single enemy of high tire mileage, but it also has a bad effect on the fuel bill, owing to the added resistance imposed.

An overrich mixture, improperly adjusted brakes, and unskillful handling of the spark lever are common causes for excessive fuel consumption, which can be remedied by careful and intelligent operation. Leaking valves, valve caps, spark plugs, and piston rings (indicated by poor compression in one or more cylinders and general lack of power) will lower the miles per gallon perceptibly, and should be attended to by a skillful mechanic without delay, as such defective operation grows rapidly and steadily worse.

Gasoline and motor oils will hereafter be purchased from the Quartermaster Corps.

Attention is invited to the following orders:

CHANGES,}
No. }

WAR DEPARTMENT,
Washington, November —, 1917.

Paragraph 134¼, 1916 Supplement to the Compilation of Orders, is changed as follows:

134½ (page 46, 1916, Supplement C. of O.). *Motor vehicles, searchlights, and other power equipment.*—Motor vehicles, searchlights, and other power equipment furnished by the Ordnance and Medical Departments and the Engineer and Signal Corps will be repaired and maintained at the expense of the respective departments and corps; the gasoline and lubricants for them will be supplied by and at the expense of the Quartermaster Corps, except to the Medical Department. Facilities on hand in the Quartermaster Corps for repair and maintenance of vehicles may be furnished to the respective departments and corps, and gasoline and lubricants may be furnished by the Quartermaster Corps to the Medical Department, settlement therefor to be made by the usual transfer of funds (sec. 11, G. O. 51, 1916). (C. C. of O. No. —, Nov. —, 1917.)

[463.7, A. G. O.]

By order of the Secretary of War.

TASKER H. BLISS,
General, Chief of Staff.

Official:
H. P. MCCAIN,
The Adjutant General.

5. ARGYROL AND PROTARGOL (SUBSTITUTES FOR).

Argyrol and protargol have become very expensive, and equivalent substitutes will be issued therefor. Narvol and silver nucleinate have been examined at the Army Medical School and the Walter Reed General Hospital and have been found to be equal to argyrol in bactericidal action and effect upon the mucous membranes.

Progentum and silver proteinate have also been examined and are considered suitable substitutes for protargol in most cases of disease of the mucous membranes.

These, or other satisfactory substitutes, will therefore be used in lieu of argyrol and protargol, unless the former is especially desired for eye work, in which case it should be so stated on the requisition.

6. BIOLOGICAL PRODUCTS.

(*a*) The following is a list of biological products furnished from the Army Medical School:

Bacterial vaccines.—Typhoid vaccine, paratyphoid A and B vaccine, triple typhoid vaccine, vaccine against strangles and the complication of influenza in horses, gonococcus vaccine,[1] staphylococcus vaccine,[1] staphylococcus-acne vaccine,[1] streptococcus vaccine.[1]

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[1] On account of the general opinion that any therapeutic results obtained from the use of a vaccine are due to the nonspecific protein reaction and not to any specific action of the vaccine, the use of these vaccines is not advised. Equally good results can be obtained from the use of small doses of triple typhoid vaccine.

(*b*) *Sera, agglutinating, for diagnostic purposes.*—Typhoid, paratyphoid A, paratyphoid B, dysentery Flexner, dysentery Y, cholera, melitensis, dysentery Shiga, pneumococcus, Type I pneumococcus, Type II; pneumococcus, Type III; meningococcus, polyvalent; meningococcus, normal; meningococcus, intermediate A; meningococcus, intermediate B; parameningococcus.

(*c*) The following vaccine and sera are authorized for human use: Triple typhoid vaccine (furnished as indicated above), smallpox vaccine, antianthrax serum (issued only for special cases) antimeningitis serum (in packages containing 2–15 c. c. vials), antipneumococcic serum (50 and 100 c. c. vials), antistreptococcic serum (50 and 100 c. c. vials), diphtheria antitoxin (1,000, 5,000, and 10,000 units), tetanus antitoxin (1,500, 3,000, and 5,000 units).

(*a*) *Miscellaneous.*—Human serum water.

The following should be obtainable from department laboratories. Now obtainable from the Army Medical School: West tubes, veal broth glucose agar, material for oil solution of dichloramine–T.

Outfits for the Schick test are obtained from the department laboratories.

In case mice are not readily obtainable locally, they should be obtained from the department laboratories.

(*b*) *Biological products* (*veterinary*).—The following biological products (veterinary), recommended by the Veterinary Advisory Board, are authorized for use in the Army:

> (*a*) *Antitetanic serum* (1,500 units in vials, as required, 500 units in syringe containers).—At the National Army and National Guard camps this may be obtained on requisition to the division surgeon. For places other than camps, requisitions should be forwarded to the department surgeon.
>
> (*b*) *Mallein, ophthalmic* (as required).—Hereafter all mallein required for the veterinary service of the Army will be obtained from the Bureau of Animal Industry, Department of Agriculture. Telegraphic requests should be made to this office stating the number of animals to be tested. The purchase of any commercial preparations of this substance is disapproved.
>
> (*c*) *Prophylactic vaccine for strangles and the complications of equine influenza* (distemper vaccine).—This is carried in stock at the various camp medical supply depots and should be obtained from them or the Army Medical School; requisitions to be forwarded to division or department surgeons, as the case may be, for approval and transmission to the depots.
>
> (*d*) *Simultaneous anthrax serum and spore vaccine.*—To be obtained by telegraphic request to this office.

(*c*) *Expired biological products not returnable.*—On account of the low price at which the biological products are sold to the Government, the manufacturers do not replace time-expired products. All of these products should be destroyed when the time limit is past. Care should be taken, however, to see that large stocks are not accumulated, and vaccine and sera should be obtained frequently in small quantities in order to avoid waste.

7. COMBAT EQUIPMENT.

The combat equipment must be maintained intact and every effort should be made to preserve the entire field equipment complete for actual combat. To this end additional supplies should be issued from post stocks for routine use at sick call and for the treatment of trivial cases at infirmaries. The compressed surgical dressing materials of the field supplies are very expensive and should be used only to equip pouches, belts, and chests. Articles of post supplies should be utilized wherever practicable.

8. DENTAL SUPPLIES (REPAIR OF).

The attention of dental surgeons is invited to the fact that the following articles can usually be repaired. Before submitting these articles for condemnation, therefore, they should be carefully examined and if found to be worthy of repair, authority should be requested to turn them into a medical supply depot: Handpieces, dental (S. S. White); engines, dental; lathes, dental; forceps; soldering and heating outfit; and all electrical appliances.

9. DRESSING, SURGICAL (CONSERVATION OF).

All manufacturers of the country who have the equipment to make field dressings are making every effort to supply the requirements of the Army and Navy, but unless great care is exercised by medical officers, there will be a shortage.

The following suggestions should be considered:

(*a*) Never use "field" dressings if "post" dressings are available. The latter cost much less, and are easier to obtain.

(*b*) Substitute absorbent cotton for absorbent gauze whenever possible; the gauze looms of the country are now being worked to their full capacity.

(*c*) The feasibility of laundering soiled dressings should be given careful consideration.

10. DRY CELLS.

The chloride of silver dry cells used in the standard electric apparatus, manufactured by the Chloride of Silver Dry Cell Manufacturing Co., have considerable sale value. The unserviceable dry cells should always be turned into the depot when new ones are received.

11. GENERAL ORDERS, BULLETINS, ETC., W. D., AND ANNUAL REPORT OF THE SURGEON GENERAL (BINDING OF).

[This relates to Regular Army posts only.]

The Annual Report of the Surgeon General will hereafter be bound every second year (two reports to be bound in one volume) and should be forwarded at the end of each two years to the medical supply depot from which the surgeon receives his medical supplies.

The general orders, circulars, and bulletins, W. D., will be bound yearly, as heretofore, and should be forwarded by mail to the medical supply depot for that purpose as soon as the indices are furnished by the War Department. Especial care should be taken to see that the files of general orders are complete, including title-page and index.

Medical supply officers are authorized to obtain estimates in the usual manner for the accomplishment of this work, the binding to be uniform with previous volumes.

Upon the completion of the binding, the volumes should be returned to the stations from which they were received, where they will be taken up on the next return of medical property.

When post surgeons forward these publications to the supply depot for binding, they should notify the department surgeons in order that the latter may be fully informed regarding the progress of the work. Medical officers stationed at independent places should notify this office when action has been taken as above indicated.

This supply letter should not be construed as authority for the binding of annual reports, general orders, etc., for the library of any independent station for which such binding has not heretofore been done.

12. HAND-AX CARRIERS.

When making requisition to the Ordnance Department for hand axes, hand-ax carriers should also be requested. They are not supplied by the Medical Department.

13. HEROINI HYDROCHLORIDUM.

No additional purchases will be made, and after the present stock is exhausted this product will be dropped from the supply table.

14. ICHTHYOL.

Ichthyol is practically unobtainable. Ichthyogen, ichthytar, or other substitutes, will be supplied instead. Requisitions should call for ichthyol or equivalent.

15. INSECTICIDE.

Sodium fluoride for roaches.—This salt has been found to be most effective. It should be freely sprinkled in a finely divided form in those place where the insects are most prevalent. It may be asked for in 5-pound quantities on special requisitions. The salt is practically without poisonous quality to the human subject unless large quantities of it are consumed.

16. INSTRUMENTS (CARE OF).

(*a*) It has been determined by prolonged study at the medical supply depot in Manila that a most satisfactory method for keeping instruments under conditions where rust is apt to interfere with the preservation of steel material has been found in a solution of 20 per cent formalin, saturated with borax. The immersion of the instruments in this solution has resulted most efficiently in the prevention of rust; and its use is recommended to medical officers, under conditions where the rust factor is encountered, for surgical instruments of all kinds.

A repair shop at the New York depot makes it possible to do ordinary repairs to surgical instruments at that place and at diminished cost. Instruments should habitually be sent by mail upon authority of this office.

(*b*) *Instruments* (*conservation of*).—There is a serious shortage of all kinds of surgical instruments, and although the manufacturers are making every effort, it will be many months before the requirements of the Army can be met. The situation as regards surgical needles is even worse. Practically no needles are made in this country, and their importation from England has been curtailed by the British Government. Arrangements have been made for producing them in this country, and it is hoped that within a few months the demand can be supplied.

In view of the conditions outlined above, all officers of the Medical Department will institute measures to conserve the present supply of surgical instruments, and thereby prevent the occurrence of a shortage otherwise inevitable.

17. INVOICES.

(*a*) *Invoices and receipts for articles turned into depots for repairs.*—These are not required, and a list showing the articles forwarded will be adequate in lieu of invoices and receipts. If for any reason the supply officer is unable to return the articles after repair, he will communicate the fact, and the question of invoices and receipts can then be taken up.

(*b*) *Discrepancy between invoice and quantity of supplies received.*—In all cases where the quantity or quality of items received from a medical supply depot differs from the invoice covering such shipments (either overdelivery or shortage), or whenever supplies are received without invoice, the medical supply officer making the shipments should immediately be informed regarding the discrepancy, in order that the matter may be promptly and satisfactorily adjusted.

18. MEDICAL PROPERTY, UNSERVICEABLE (DISPOSITION OF).

Under the provisions of A. R. 907, as amended by Changes A. R. No. 61, W. D., September 24, 1917, the following-named medical supply depots are designated to receive such unserviceable medical property as is worth the transportation charges and which can be advantageously disposed of either by sale or by being broken up into parts and used in the repair or manufacture of other articles:

Medical supply depot, 1210 Arch Street, Philadelphia, Pa.: From all posts, camps, and stations in the Eastern and Northeastern Departments.

Medical supply depot, Stewart Avenue and Glenn Street, Atlanta, Ga.: From all posts, camps, and stations in the Southeastern Department (excepting those in the States of Arkansas, Louisiana, and Mississippi) and the coast defenses of Galveston, Tex.

Medical supply depot, 500–512 North Fourth Street, St. Louis, Mo.: From all posts, camps, and stations in the States of Arkansas, Louisiana, Mississippi, Missouri, Kansas, Colorado, and Oklahoma.

Medical supply depot, 3930 Federal Street, Chicago, Ill.: From all posts, camps, and stations in the Central Department excepting those in the States of Colorado, Kansas, and Missouri.

Medical supply depot, 309 North Medina Street, San Antonio, Tex.: From all posts, camps, and stations in the Southern Department, excepting those in the State of Oklahoma.

Medical supply depot, Bay Street, Harbor Warehouse No. 3, San Francisco, Calif.: From all posts, camps, and stations in the Western Department.

It is noted from many reports of survey and inspection reports that medical property is being quite extensively destroyed. It is desired that such property, any part of which can be utilized in the manufacture of other articles or supplies, be turned into a depot. The article may have no salable value at a particular post, camp, or station and yet a material part of it may be of value in the manufacture of other articles or in the repair of articles of like character.

There will be established at several places in the United States hospitals for the training of disabled soldiers, which will probably be known as "Curative Shops," in which damaged and unserviceable articles can be reworked or repaired, or other articles made out of the material. It is intended to send to such hospitals this material for use in various ways, in the training of such disabled soldiers, and to prevent the total loss of more or less serviceable material.

19. MEDICAL SUPPLIES (CONSERVATION OF).

The attention of officers of the Medical Department (medical, dental, and veterinary) is invited to the fact that there is at present a shortage of medicines and dressings in the United States, and that it is probable that this condition will continue indefinitely.

All officers are therefore enjoined to make every effort to eliminate waste of supplies of every kind, and especially of those belonging to classes mentioned in paragraph No. 1.

As regards the conservation of medicines, the following rules should be observed:

(*a*) Medicine should be prescribed only when there is a clear indication for its use. Soldiers very seldom require placebos; cheap ones should be used if placebos are required at all.

(*b*) Medicines should not be prescribed in large quantities. For example, a 4-ounce mixture should not be ordered if a 2-ounce will do, or a dozen tablets given if less than that number will meet the requirements of the patient. The quantity prescribed should not exceed the number of doses the officer writing the prescription expects the patient to take in the following 48 hours.

(*c*) It is advisable to administer medicines in hospitals or dispensaries under supervision whenever possible.

(*d*) Particular care should be taken to avoid the unnecessary administration of cocaine, quinine, and all preparations containing morphine or opium. The stocks of quinine and opium are very small at present and every effort should be made to conserve the supply of these important drugs.

20. NEEDLES (HYPODERMIC).

Great care should be taken to specify the particular syringe for which hypodermic needles are required. This specification will avoid delay necessitated by having to ascertain the type of syringe for which the needles are desired. Hypodermic needles are scarce and difficult to obtain. They should be made to last as long as possible.

21. PENCILS (HAIR).

On account of the war, this item is now unobtainable in the United States. Substitutes should be improvised by the surgeons.

22. PETROLATUM LIQUIDUM AND RUSSIAN OIL.

The standard liquid petrolatum of the supply table is a pure refined product and will answer all purposes indicated by the heavy Russian oil. It has been used for internal administration satisfactorily both at the Walter Reed General Hospital and attending surgeon's office, Washington, D. C.

23. POTASSIUM PERMANGANATE.

This item is at present practically unobtainable, and will no longer be supplied. Terminal disinfection is seldom necessary, and other material must be substituted. This office concurs in the following statement:

> Terminal disinfection is apparently of little value, especially if proper care has been exercised during the course of disease.—Manual for Health Officers, by J. S. MacNutt, lecturer of public health service in the Massachusetts Institute of Technology.

24. PUBLIC FUNDS (AUTHORIZATION FOR EXPENDITURE OF).

(*a*) When permission is given to a surgeon for the purchase or repair of Government property the amount involved is charged against the quarterly allotment in this office. The purchase should be made and vouchers in payment submitted to this office for approval within 30 days after receipt of the authority. If purchase be delayed for any cause beyond this period, the surgeon should report the fact and state when the purchase will be completed. In any event, a report should be made showing how much of the authorized amount has been actually expended.

(*b*) *Bulletin No. 37, W. D., December, 1915.*—The attention of all medical officers who make deposits of money to the credit of the Treasurer of the United States is invited to the stringent requirements of Bulletin No. 37, W. D., December, 1915, and the notation to be made on the efficiency reports of those who fail to comply therewith.

25. REQUISITIONS.

(*a*) All requisitions from camps should be forwarded to the Surgeon General's office for action, except in cases of emergency, when application may be made by telegraph for small quantities of supplies procured locally to save life or prevent suffering, as indicated in paragraph 476, M. M. D., 1916.

(*b*) Field medicines will be used at the camps instead of post medicines.

(*c*) Scales, weights, and other paraphernalia for dispensing medicines will not be supplied to camps.

(*d*) During the period of the present emergency no instruments or appliances should be requested on requisitions which are not included in the List of Staple Medical and Surgical Supplies, Part 1.

(*e*) *Field special requisitions.*—It is necessary that a separation be made of requests for post medical supplies and those for field supplies, because of the difference in stock carried by depots.

All articles listed as post supplies and additional articles of that classification are properly placed on requisition for post medical supplies. Following the same plan, all articles of field supply should appear on a field requisition. The two requisitions should be rendered at the same time to cover the supplies necessary for the period. Veterinary supplies and dental supplies should also be requested on separate requisitions.

(*f*) *Supplies on hand.*—Not infrequently a special operating table, cabinet for dressings and instruments, or other special apparatus is requested on a special requisition, and the request is accompanied by the showing "On hand—O," whereas the returns in this office show that other similar articles are on hand at the hospital. The statement "On hand—O" should hereafter be qualified with a further statement in the column of "Remarks," showing the number and make of equivalent articles which may be on hand at the hospital, when this is the fact.

It is directed that amounts indicated in the "On hand" column shall include the amount of each item due on approved pending requisitions, in addition to the quantities actually on hand.

(*g*) *Initial equipment and replenishments.*—All requisitions for initial equipment and for replenishments for National Guard and National Army camps should be forwarded direct to this office for approval. The requisitions, except in emergency, will not be forwarded more frequently than once a month. Emergency requisitions may be forwarded at any time, but a full statement of the necessity must be entered under the column of "Remarks."

(*h*) *Annual requisition to be discontinued.*—Annual requisitions will be discontinued during the period of the war. All requisitions for medical, dental, veterinary, and automobile supplies will be prepared on Form No. 35, Medical Department.

It is not intended, nor is it desirable, to request all the items on the several supply tables. The officer who prepares the requisition should request only those articles which he habitually prescribes and uses. Surgeons are cautioned to exercise every possible economy. As previously indicated in this supply letter, an unlimited quantity of medical supplies can not be obtained, and if our troops abroad are to have an adequate supply, those at home must economize.

26. RUBBER GOODS (UNSERVICEABLE).

All unserviceable rubber goods, including gloves, rubber sheeting, hot-water bottles, fountain syringes, etc., should be turned into the nearest medical supply depot (excepting Washington and New York) by parcel post.

27. SERA (DIAGNOSTIC).

Diagnostic sera (agglutinating) should be obtained from the Army Medical School on request sent direct to the commandant of that institution. (See par. 6*b*.)

28. SILK (OILED).

The purchase of oiled silk is to be discontinued owing to the scarcity and prohibitive price of this article. Oiled paper will be purchased and issued in lieu of the above.

29. SLIDES (GLASS).

These are imported and at the present very difficult to obtain. Great economy should be exercised in their use.

30. SPARK PLUGS.

Attempt should not be made to repair spark plugs locally. It has been frequently noticed that more damage has been done by ineffectual attempts at repair than through fair wear and tear. Generally a spark plug that has not been tampered with requires only thorough cleaning and renewal of insulating wax about the center electrode. Authority should be requested to turn defective spark plugs into a supply depot for repair.

31. SPHYGMOMANOMETER.

Instructions should always be given the users of all types of aneroid instruments that they will not stand rough usage, and steps should be taken to keep the manometer out of the hands of inexperienced attendants, who frequently through curiosity try them out with the usual disastrous results.

32. SYRINGES.

Until further notice, the Luer type syringes will be issued in the following sizes: 2 c. c., 10 c. c., and 30 c. c.

33. TANKS (SOAPSTONE, DEVELOPING).

The tank developing soapstone is a large and expensive tank and will no longer be issued. Only porcelain tanks will hereafter be issued.

34. TURPENTINE.

It is evident that at some posts the refined medicinal turpentine issued in bottles has been used for the making of floor polish. In view of the fact that this bottled turpentine is exclusively for medicinal use and costs very much more than the commercial turpentine in cans, it should never be used as an ingredient of floor polish.

35. TIN CONTAINERS.

The attention of all medical officers is invited to the present shortage of tin. It has become increasingly difficult to obtain an adequate supply of tin containers for field supplies, and it is directed, therefore, that all serviceable empty tin containers be returned to the nearest supply depot by parcel post or mail.

Upon receipt of these empty tins the medical supply officers will have them refilled and reissued upon approved requisition.

36. TYPEWRITING MACHINES (PACKING).

(*a*) These machines are sometimes received at depots packed in such way as to provoke the comment of a supply officer that "the damage sustained in transit was such as to render it impossible to repair the machine." Every care should be given this matter with a view to securely fastening the carriage in place. Ribbon spools should be removed and wrapped separately. The machine should be securely fastened to the bottom of the box in which it is packed, using bolts or hinges for the purpose.

(*b*) *Free repair to typewriters.*—The Royal typewriters are purchased by the Medical Department under the following guaranty:

> Each typewriter is guaranteed to be a perfect working machine; and any broken or defective parts not due to misuse, accident, or neglect will be replaced free of charge at any time within two years from date of delivery.

It has been observed that numerous requests for repairs to typewriters have been received in this office just after the two-year period has elapsed, in which case it has been necessary to have the repairs made at the expense of the Government. It is directed that hereafter all new typewriter machines (Royal) be thoroughly gone over after they have been in use about 18 months, and that a request for such repairs as are necessary be forwarded to this office in time to obtain the benefit of the two-year clause mentioned above.

37. VETERINARY MEDICINES (CONSERVATION OF).

With the increase of knowledge it has become clear that the majority of drugs have no economic value as therapeutic agents; in other words, they do not favorably influence the course of disease to an appreciable extent.

In private practice drugs for veterinary use continue to be valuable in so far that they impart to preparations in public demand certain features such as odor or appearance.

The use of many nonessential drugs has become a habit; it therefore behooves veterinary officers prescribing drugs at public cost, for public animals, to revise their therapeutics and use only such drugs as are known to be valuable in an economic sense. The number of the latter is small. In making requisition for drugs for veterinary use the minimum, rather than the maximum, requirements should be estimated.

The value of a drug is to a great extent dependent upon its freshness, and the medical supply depots are not so inaccessible as to justify veterinary officers in stocking dispensaries as one would provide against a siege.

It should be borne in mind that the temporary nature of everything military in time of war renders the holding of large stocks of drugs injudicious and unnecessary.

It is well known to experienced members of the veterinary profession that it is the inefficient practitioner who makes great show and use of drugs.

Pressure is frequently brought to bear by laymen upon veterinarians of the service to prescribe powders of various kinds for what is known as "conditioning" purposes.

This practice should be discontinued as, in the absence of organic disease, any defect in condition may as a rule be remedied by intelligent attention to stable management with special attention to watering and feeding. If these are neglected, medicinal agents will not make good the neglect. Even at the present time the superstitious devotion to drugging of horses and mules amounts with many people to a fetish. It is for veterinary officers to bring contemporary knowledge up to date, and absolutely refuse to prescribe needless drugs at the request of those ignorant of such matters.

The greatly increased cost of drugs, the large doses that are appropriate for horses as compared with human beings, the enormous increase in public animals, are all factors that contribute to the importance of putting into economical practice modern knowledge as to the inefficiency for veterinary therapeutic purposes of the majority of drugs habitually prescribed.

There has been issued a standard supply table for use of the Veterinary Corps. After due deliberation and consultation it is believed the drugs listed therein are ample for veterinary practice.

The ability of a practitioner may be judged from his deviation from this supply table and the state of his mortality and incurable list.

38. WEB BELTS.

Belts, web, medical officers' (par. 864), and belts, web, enlisted men, Medical Department, are now the property of the Medical Department.

The belts of officers will be issued, complete, with the contents listed in paragraph 864, to medical officers individually, and will be accounted for as required by paragraph 507*a*, M. M. D., 1916. Being property of the Medical Department, they will not be sold. Special care should be taken to prevent injury and damage to them.

Belts, web, for enlisted men, complete, with contents (par. 907, M. M. D., 1916), canteen hangers, and pouches for diagnosis tags and instruments will be invoiced to commanding officers of ambulance companies, field hospitals, evacuation hospitals, base hospitals, and to surgeons of posts, regiments, and detached organizations. They may be transferred with the enlisted personnel in the same manner as Hospital Corps pouches have been hitherto.

A sufficient number of these belts have not been received to make a general issue possible. Until a larger stock has been accumulated, they will be issued to troops going overseas, and to such other sanitary personnel as may be directed from this office. The belts will be available for general issue probably by the middle of January, 1918. Until the belts are available for issue, Hospital Corps pouches supplied with the equipment listed in paragraph 907 will be issued for drill and instruction purposes to a part of the enlisted personnel in each organization not already equipped.

39. X-RAY.

(*a*) *Films.*—It is advised that 5 by 7 inch films be used for the hands and feet.

(*b*) *Plates.*—Referring to paragraph 848, M. M. D., X-ray plates 11 by 14 inches will no longer be issued. The roentgenologist of the Army Medical School informed this office that three sizes of X-ray plates are sufficient for all purposes, viz, 8 by 10 inches, 10 by 12 inches, and 14 by 17 inches. After the present supply of 11 by 14-inch X-ray plates is exhausted, this size will not be furnished upon requisitions unless specifically emphasized and approved by this office.

(*c*) *Tubes.*—The metal parts of X-ray tubes are costly, and as long as they are in good condition the tubes can be repaired by simply building the glass around the metal. Any punctured tube can be reblown. Authority should, therefore, be requested to turn into a medical supply depot all punctured X-ray tubes. Metal parts that are in good condition, unless they are of the old type with platinum target, should also be turned in to the supply depot.

ALLOWANCE OF MEDICAL SUPPLIES FOR THREE MONTHS FOR ORGANIZATIONS IN CAMPS.

It is expected that the allowance of expendable articles will be sufficient to cover all ordinary requirements for three months.

Nonexpendable articles will be replaced only as they become unserviceable. With proper care most of them should remain in serviceable condition for several years.

When supplies are exhausted or their exhaustion is imminent, a renewal thereof should be asked for on special requisition forwarded to the division surgeon.

1. Allowance for one regiment of Infantry.
2. Allowance for one regiment of Artillery or Engineers.
3. Allowance for one machine-gun battalion (three companies).
4. Allowance for one machine-gun battalion (four companies).
5. Allowance for one signal battalion.
6. Allowance for one division headquarters.
7. Allowance for trains and military police.
8. Allowance for one regiment of Cavalry.

Articles (nonexpendable articles in capital letters).	1	2	3	4	5	6	7	8
Strength of organizations	3,755	1,700	581	768	455	164	1,855	1,250
Medicines and antiseptics.								
Acetphenetidinum (phenacetin), 324-mgm. tablets, 500 in bottle......bottles	12	5	2	2	1	1	4	3
Acidum boricum, 324-mgm. tablets, 500 in bottle......do	12	5	2	2	1	1	4	3
Acidum salicylicum, 324-mgm. tablets, 500 in bottle......do	6	2	1	1	1	1	2	1
Adrenalin chloride, 1-mgm. tablets, 20 in tube......tubes	6	2	1	1	1	1	2	1
Æther, ¼ pound in tin......tins	15	6	2	3	1	1	2	2
Alcohol......gallons	20	8	3	4	2	2	5	5
Apomorphinæ hydrochloridum, 6-mgm. hypo. tablets, 20 in tube, ...tubes	2	1	1	1	1	1	1	1
Argenti nitras crystals, 1 ounce in bottle......bottles	2	1	1	1	1	1	1	1
Argenti nitras fusus, 1 ounce in bottle......do	2	1	1	1	1	1	1	1
Argyrol (or equivalent), 1 ounce in bottle......do	2	1	1	1	1	1	1	1
Aspirin (acetyl-salicylic acid), 324-mgm. tablets, 500 in bottle...do	10	4	2	3	1	1	3	3
Atropinæ sulphas, 0.65-mgm. hypo. tablets, 20 in tube......tubes	1	1	1	1	1	1	1	1
Bismuthi subnitras, 324-mgm. tablets, 500 in bottle......bottles	2	1	1	1	1	1	1	1
Capsicum, 32-mgm. tablets, 500 in bottle......do	1	1	1	1	1	1	1	1
Chloralum hydratum, 324-mgm. tablets, 500 in bottle......do	1	1	1	1	1	1	1	1
Chloroformum, ¼ pound in tin......tins	20	8	3	4	2	1	4	4
Cocainæ hydrochloridum, 10-mgm. hypo. tablets, 20 in tube...tubes	8	4	2	2	1	1	2	2
Codeina, 32-mgm. tablets, 500 in bottle......bottles	4	2	1	1	1	1	2	2
Collodium, 1 ounce in bottle......do	16	8	3	4	2	1	4	4
Digitalinum, 1-mgm. hypo. tablets, 20 in tube......tubes	1	1	1	1	1	1	1	1
Emplastrum belladonnæ, 2 yards by 6 inches, in tin......tins	6	3	2	2	1	1	3	3
Emplastrum cantharidis, 1 yard by 6 inches, in tin......do	1	1	1	1	1	1	1	1
Glycerinum, 1 quart in bottle......bottles	6	3	2	2	1	1	2	2
Hexamethylenamina (urotropin), 324-mgm. tablets, 500 in bottle, ...bottles	3	2	1	1	1	1	2	1
Hydrargyri chloridum corrosivum, tablets (antiseptic) (par. 902), 250 in bottle......bottles	6	3	1	2	1	1	2	1
Hydrargyri chloridum mite, 32-mgm. tablets, 1,000 in bottle. bottles	4	2	1	1	1	1	2	1
Hydrargyri iodidum flavum, 10-mgm. tablets, 1,000 in bottle. bottles	4	2	1	1	1	1	2	1
Ichthyolum (or equivalent), 3 ounces in bottle......do	6	3	1	1	1	1	2	1
Iodum-potassii iodidum, in tube......tubes	200	100	30	40	20	10	30	51
Iodine swabs, 6 in box......boxes	100	50	16	24	12	6	16	20
Linimentum rubefaciens, tablets (par. 902), 250 in bottle....bottles	20	10	3	4	2	1	10	6
Liquor formaldehydi, 1 quart in bottle......do	20	10	3	4	2	1	10	6
Magnesii sulphas, 1 pound in tin......tins	90	36	12	16	5	3	36	24
Mistura glycyrrhizæ composita, tablets (par. 902), 1,000 in bottle, bottles......	30	12	4	5	2	1	12	8

Articles (nonexpendable articles in capital letters.)	1	2	3	4	5	6	7	8
Strength of organizations	3,755	1,700	581	768	455	164	1,855	1,250
Medicines and antiseptics—Continued.								
Morphinæ sulphas, 8-mgm. hypo. tablets, 20 in tube.........tubes..	30	12	4	5	2	1	12	8
Morphinæ sulphas, 8-mgm. tablets, 500 in bottle............bottles..	5	2	1	1	1	1	2	1
Nitroglycerin, 0.65-mgm. tablets, 500 in bottle................do....	2	1	1	1	1	1	1	1
Normal saline solution, tablets (par. 902), 100 in bottle........do....	2	1	1	1	1	1	1	1
Oleum ricini, 1 quart in bottle...............................do....	24	9	3	4	1	1	9	6
Oleum terebinthinæ rectificatum, 1 quart in bottle............do....	18	8	2	3	1	1	8	5
Petrolatum, 1 pound in tin...................................tins..	30	12	4	5	2	1	12	8
Phenol, ½ pound in bottle....................................bottles..	32	12	4	5	2	1	12	8
Phenylis salicylas (salol), 324-mgm. tablets, 500 in bottle.......do....	4	2	1	1	1	1	2	1
Pilulæ aloini compositæ (or tablets) (par. 902), 500 in bottle...do....	12	5	1	2	1	1	5	2
Pilulæ camphoræ et opii (par. 902), 500 in bottle...............do....	6	3	1	1	1	1	3	2
Pilulæ catharticæ compositæ, 1,000 in bottle....................do....	6	3	1	1	1	1	3	2
Pilulæ ferri compositæ (par. 902), 1,000 in bottle...............do....	4	2	1	1	1	1	2	1
Plumbi acetas, 130-mgm. tablets, 500 in bottle..................do....	5	2	1	1	1	1	2	1
Potassii bromidum, 324-mgm. tablets, 500 in bottle............do....	8	3	1	1	1	1	3	2
Potassii chloras, 324-mgm. tablets, 1,000 in bottle..............do....	4	2	1	1	1	1	2	1
Potassii iodidum, 324-mgm. tablets, 500 in bottle..............do....	4	2	1	1	1	1	2	1
Protargol (or equivalent), 1 ounce in bottle.....................do....	40	18	6	8	2	2	18	12
Pulvis ipecacuanhæ et opii, 324-mgm. tablets, 500..............do....	6	3	1	1	1	1	3	2
Quininæ hydrochlorosulphas, 32-mgm. hypo. tablets, 20 in tube, tubes....	9	4	1	1	1	1	4	2
Quininæ sulphas, 200-mgm. tablets, 1,000 in bottle..........bottles..	8	4	1	2	1	1	4	3
Sapo mollis (green soap), ½-pound bottle in case...............do....	30	12	4	5	2	1	12	8
Sodii bicarbonas, 324-mgm. tablets, 1,000 in bottle..............do....	10	4	1	2	1	1	4	2
Sodii bicarbonas et mentha piperita (par. 902), tablets, 1,000 in bottle, bottles....	3	2	1	1	1	1	2	2
Sodii carbonas monohydratus, for surgical use, ½ pound in bottle, bottles....	1	1	1	1	1	1	1	1
Sodii salicylas, 324-mgm. tablets, 500 in bottle...............bottles..	4	2	1	1	1	1	2	1
Spiritus ammoniæ aromaticus, ½ pound in bottle...............do....	16	7	2	3	1	1	3	5
Strychninæ sulphas, 1-mgm. hypo. tablets, 20 in tube.........tubes..	60	25	8	12	4	3	20	16
Sulphur lotum, 1 pound in tin or carton.......................tins..	3	1	1	1	1	1	1	1
Tinctura digitalis, 0.3-c. c. tablets, 500 in bottle.............bottles..	3	1	1	1	1	1	1	1
Tinctura opii, ½ pound in bottle..............................do....	2	1	1	1	1	1	1	1
Trochisci ammonii chloridi, 250 in bottle.......................do....	6	3	1	2	1	1	3	3
Unguentum hydrargyri, ½ pound in bottle......................do....	10	5	2	3	1	1	5	2
Unguentum hydrargyri chloridi mitis, 30%, ½ pound in bottle, bottles....	50	20	7	9	3	2	20	12
Zinci oxidum, powder, ½ pound in bottle, tin or carton.........do....	4	2	1	1	1	1	2	1
Zinci sulphas, 324-mgm. tablets, 500 in bottle..................do....	2	1	1	1	1	1	1	1
Stationery.								
Bands, elastic...dozen..	12	12	12	12	12	48	12	12
Books, blank, 8vo., 150 pages..........................number..	2	2	2	2	2	6	2	2
Books, note, manifolding, fillers................................do....	20	12	4	6	2	10	4	8
Envelopes, official, letter......................................do....	300	300	100	150	100	1,200	100	300
Erasers, rubber, pencil..do....	3	3	2	2	2	12	2	2
Ink, black, powder or tablets.................................boxes..	1	1	1	1	1	2	1	1
Labels for vials..gross..	2	2	1	1	1	1	2	2
Labels, poison..dozen..	4	2	1	1	1	1	2	1
Pads, prescription...number..	100	50	18	24	8	5	40	40
Paper, blotting..pieces..	6	6	4	4	4	12	4	4
Paper, carbon, letter, 100 sheets in box......................boxes..	1	1	1	1	1	3	1	1
Paper, writing, letter, 100 sheets in pad.......................pads..	12	12	8	8	8	36	8	8
Paper, writing, note, 100 sheets in pad.........................do....	18	18	12	12	12	54	12	12
Paste, photo, in tube with brush.............................tubes..	2	2	1	1	1	3	1	1
Pencils, indelible..number..	12	6	2	2	2	12	2	6
Pencils, lead...do....	24	18	12	12	8	48	18	18
Penholders...do....	8	6	3	3	3	12	6	4
Pens, steel...do....	96	60	24	24	24	144	60	48
Miscellaneous.								
BAGS, RUBBER, HOT WATER AND SYRINGE...number..	1	1	1	1	1	1	1	6
Bandages, gauze, 6 dozen in box.............................boxes..	40	18	6	8	2	1	4	1
Bandages, suspensory......................................dozen..	9	4	1	1	1	1	4	6
BASINS, HAND, E. W......................................number..	6	6	2	2	2	2	3	3
BEDSACKS...do....	6	6	......	......	......	......	6	6
Boxes, folding, for tablets.....................................gross..	12	6	2	3	1	1	6	3
Boxes, ointment, 3 in nest......................................nests..	100	45	15	20	6	4	40	30
Brooms, corn...number..	2	2	2	2	1	1	2	2
Brushes, hand, fiber..do....	12	10	6	6	4	4	10	6
Brushes, scrubbing..do....	3	3	2	2	2	2	3	3
BUCKETS, E. W., 3 IN NEST...............................nests..	1	1	1	1	1	1	1	1
Candles, coach, sixes.......................................pounds..	4	4	2	2	2	2	4	4
Corks, assorted, 300 in bag.....................................bags..	1	1	1	1	1	1	1	1
Corks, No. 7, for alcohol tins...............................number..	6	6	6	6	6	6	6	6
CORKSCREWS...do....	1	1	1	1	1	1	1	1
Cotton, absorbent, in roll.......................................rolls..	40	20	7	9	3	2	20	12
Eyeshades, single...number..	6	3	2	2	2	2	3	2
Lanterns, globes for, green.....................................do....	1	1	1	1	1	1	1	1
Lanterns, globes for, white.....................................do....	2	2	2	2	2	2	2	2
Lanterns, wicks for...do....	2	2	2	2	2	2	2	2
LANTERNS, WITHOUT GLOBES OR WICKS.........do....	2	2	2	2	2	2	2	2
Matches, safety, boxes......................................dozen..	3	3	3	3	3	3	3	3
Medicine droppers..number..	36	24	12	12	6	6	24	12
Medicine glasses..do....	3	3	2	2	2	2	3	3
Muslin, unbleached..yards..	6	4	2	3	2	2	4	3
Needles, common..papers..	1	1	[illegible]	1	1	1	1	1
Needles, surgical...dozen..	1	1	1	1	1	1	1	1
Paper, toilet..packages..	24	12	4	5	2	2	12	8

Articles (nonexpendable articles in capital letters).	1	2	3	4	5	6	7	8
Strength of organizations	3,755	1,700	581	768	455	164	1,855	1,250
Miscellaneous—Continued.								
PILLOW SACKS........number..	6	6	.....	.....	.....	.....	6	6
Pins, common........papers..	6	6	2	2	1	1	6	4
Pins, safety........dozen..	24	12	4	6	3	3	12	12
PITCHERS, 3-LITER, E. W........number..	1	1	1	1	1	1	1	1
Plaster, adhesive, z. o., 5 yards by 1 inch........spools..	36	24	15	18	6	4	24	24
Plaster, adhesive, z. o., 5 yards by 2½ inches........do....	24	16	10	12	4	2	16	16
PUS BASINS........number..	1	1	1	1	1	1	1	1
Soap, common........pounds..	12	12	6	6	6	6	12	12
Soap, Ivory, or equal........cakes..	60	60	20	24	8	6	60	60
Splints, wire gauze for, 1 yard in roll........rolls..	6	3	3	3	2	1	3	3
STOVES, KEROSENE, 1 BURNER........number..	1	1	1	1	1	1	1	1
Stoves, kerosene, extra wicks for........do....	1	1	1	1	1	1	1	1
Sutures, catgut, chromicized, 3 in package........packages..	12	6	4	4	4	4	6	6
Sutures, catgut, plain, 3 in package........do....	12	6	4	4	4	4	6	6
Sutures, silk, 3 in package........do....	12	6	4	4	4	4	6	6
Syringe, penis, glass, in case........number..	200	100	40	50	20	12	100	60
Tags, diagnosis........books..	9	5	4	6	2	1	2	3
Thermometers, clinical........number..	18	12	4	6	3	2	6	6
Tongue depressors, wood........gross..	6	3	1	2	1	1	3	2
Tubing, drainage........yards..	2	2	1	1	1	1	2	2
Vials, 1-ounce........dozen..	2	2	1	1	1	1	2	2
Vials, 2-ounce........do....	12	6	2	3	1	1	6	3
Vials, 4-ounce........do....	2	2	1	1	1	1	2	2
Additional articles.								
Applicators for throat, wood........gross..	4	2	1	1	1	1	2	2
Can openers........number..	1	1	1	1	1	1	1	1
First-aid packets for instruction (par. 945)........do....	200	100	30	40	15	10	70	70
Gauze, plain........yards..	1,000	500	170	225	75	40	400	400
Lamps, spirit, glass........number..	1	1	1	1	1	1	1	1
Paper, oiled, 5 yards in roll........rolls..	4	2	1	1	1	1	2	1
RECRUITING OUTFITS (PAR. 952)........number..	1	1	.....	.....	.....	.....	.....	1
Soap, scouring........pounds..	2	2	1	1	1	1	2	2
SYRINGES, HYPODERMIC, LUER, 2 C. C........number..	6	3	1	2	1	1	2	2
Syringes, hypodermic, Luer, 2 c. c., extra needles for........do....	36	18	6	12	6	6	12	12
Syringes, hypodermic, extra wires for........bundles..	12	6	2	4	2	2	4	4
Tumblers, glass........number..	12	12	4	6	2	2	12	9

FIELD EQUIPMENT.

(See Notes.)

Litters, combat equipment (pars. 866 and 867, M. M. D.) and camp infirmary equipment (pars. 869 and 870, M. M. D.) will be issued as indicated below. The allowance of litters is one for every 50 men, or major fraction thereof, of the authorized strength of the organizations. It includes those issued to companies and those forming a part of the units mentioned herein, all being usually carried on the combat wagons or other transportation of the organizations.

Organization.	Litters.	Combat equipment.	Camp infirmary
Division headquarters and headquarters troop........	See Note 1.	See Note 1.	
Infantry regiment........number..	.....	.....	1
Headquarters company........do....	6	.....	.....
Supply company........do....	3	.....	.....
Machine-gun company........do....	4	.....	.....
Battalion........do....	20	1	.....
Infantry machine-gun battalion (3 companies)........do....	12	1	.....
Infantry machine-gun battalion (4 companies)........do....	16	1	.....
Artillery regiment, light (2 battalions)........do....	.....	.....	1
Headquarters company........do....	4	.....	.....
Supply company........do....	2	.....	.....
Battalion........do....	12	1	.....
Artillery regiment, heavy (3 battalions)........do....	.....	.....	1
Headquarters company........do....	5	.....	.....
Supply company........do....	3	.....	.....
Battalion........do....	9	1	.....
Trench mortar battery........do....	4	.....	.....
Engineer regiment........do....	.....	.....	1
Headquarters........do....	2	.....	.....
Battalion........do....	16	1	.....
Signal battalion........do....	9	1	.....
Train headquarters and military police........do....	7	.....	.....
Ambulance company (par. 874, M. M. D.)........do....	[1] 100	.....	.....
Field hospital company (par. 879, M. M. D.)........do....	50	.....	.....
Total for division........	1,081	25	8

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[1] Forty-eight of these on ambulances.

NOTE 1.—Division headquarters, telegraph companies, aero squadrons, balloon companies, etc., should be equipped with the following medical supplies in lieu of the regular combat equipment:

AX, SHORT HANDLE	number	1
BUCKET, G. I.	do	1
Candles, coach, sixes	pounds	1
CHEST, MEDICAL AND SURGICAL (PAR. 932, M. M. D.)	number	1
DESK, FIELD, NO. 2 (PAR. 941, M. M. D.)	number	1
LANTERNS, FOLDING	number	1
LITTER, WITH SLING	do	1
Box surgical dressings (par. 955, M. M. D.)	do	1
WIRE CUTTER	do	1

NOTE 2.—Expendable articles pertaining to the combat equipment and to the camp infirmary should not be used while the troops are at the mobilization and concentration camps. Nonexpendable articles may be used when necessary.

NOTE 3.—Packsaddles will not be issued for use overseas; medical carts will be used instead.

Supply Letter No. 24.

MARCH 11, 1918.

SIR: Attention is invited to the following, and strict compliance with the instructions and suggestions contained therein is directed:

BIOLOGICAL PRODUCTS—TYPHOID VACCINE, ETC.

The commandant of the Army Medical School invites the attention of this office to the great waste of triple typhoid vaccine. This material costs the Medical Department at least $50 per liter, not including overhead charges; i. e., pay of officers and enlisted men engaged in its manufacture, packing and shipping, and expressage. Many medical officers do not seem to appreciate the money value of this vaccine, and the Army Medical School constantly receives requisitions calling for amounts greatly in excess of actual requirements. A great number of medical officers allow the time limit to expire, and even return the vaccine to the Army Medical School, at great expense, by express, after it has become worthless and should be destroyed.

The Army Medical School has shipped to the various camps since the draft enough vaccine to vaccinate the present Army from two to three times.

In view of the large quantities of vaccine which are being allowed to pass the time limit in the supply depots, it is evident that the instructions in Circular No. 16, S. G. O., March 20, 1916, indicated below, are not being followed:

> When for any reason a larger stock is on hand than appears to be needed, directions as to its disposition will be obtained from the commandant, Army Medical School, upon application to him direct, stating date of receipt of the vaccine.

As time-expired vaccine is being returned to the Army Medical School, attention is also invited to the following quotation from Circular No. 16:

> Stock over 4 months old will be destroyed when a new supply has been received.

In view of the above, all biological products will in the future be invoiced, receipted, and accounted for, the same as other medical supplies. Medical officers are cautioned to exercise the greatest economy in the use of this material. They should not ask for quantities in excess of their needs within the time limit. In case an emergency arises requiring more of this material, an additional supply may be obtained on telegraphic request.

Medical officers who have on hand a greater quantity of triple typhoid vaccine than is required for immediate use should notify the commandant of the Army Medical School 30 days prior to the expiration date, so that it can be shipped to some other point where it may be needed and its loss be avoided.

Any biological supplies which have become worthless on account of deterioration should be placed before a surveying officer for his action in order to determine the responsibility for the loss resulting from failure to comply with these instructions.

LYE AND OTHER CLEANING MATERIAL.

While this office approves the use of lye in proper quantities for the cleaning of hospital floors, corridors, etc., the tendency everywhere to use an excessive quantity of this product is noted. It is believed that a more satisfactory method of determining the quantity to be used could be devised than to pour the lye from the can into a pail. It is suggested that a can of lye be dissolved in a sufficient quantity of water and that the minimum quantity of this solution per pail of water to obtain the results desired should be determined experimentally. The lye solution should then be made up in bulk and instructions issued those concerned with the cleaning as to exactly how much of the solution to put in each pail of water.

The same plan should also be applied to the soap used for cleaning purposes.

This office does not intend to limit the quantity of supplies rightfully used, but it must call upon division surgeons and all others having control of the expenditure of these supplies to see that there is no waste. Waste does not necessarily mean the throwing out of unused materials, but applies equally well to the using of larger quantities to obtain results than are really needed.

ELECTRICAL APPARATUS.

Owing to the fact that requisitions for electrical apparatus for use with the electrical current available at the hospital frequently fail to specify the kind of current on which the apparatus is to be used, or give incomplete data, much unnecessary correspondence is required, thereby causing delay in filling the requisitions. In the future all requests for electrical apparatus for use on the current available at the hospital will specify the type of current (A. C. or D. C.), voltage, cycle, and phase.

MEDICAL PROPERTY, UNSERVICEABLE, DISPOSITION OF.

Referring to section 18 of Consolidated Supply Letters 1 to 23, inclusive, all property to be turned in to regular medical supply depots, except as provided under section 17*a*, should be regularly invoiced and receipted for.

In view of the establishment of a reclamation division of the Quartermaster Corps at the various posts, camps, cantonments, and other units of the Army, the following directions should apply:

> All articles of unserviceable property pertaining to the mobile army heretofore "destroyed," "broken up," or "sold" on inventory and inspection reports, or "destroyed" on survey reports, except animals, and that which must be disposed of at once for sanitary reasons, will be turned over on inventory and inspection reports and survey reports under paragraph 717, Army Regulations, to the reclamation officer. The inventory and inspection reports will show the property in a column "To be turned in for salvage," and will, upon completion by the inspector, without approval, be a valid voucher for the accountable officer to drop it from his return. Unserviceable expendable articles will not be destroyed but will be turned over, with a list of the same, by the responsible officers to the reclamation officer,

and in view of the establishment of these reclamation units, section 18 of the consolidated supply letters is accordingly modified.

Nothing in the provisions of the above paragraph should, however, be construed to invalidate the provisions of paragraph 1488, Army Regulations, 1913.

ACCOUNTABILITY (RETURNS OF MEDICAL PROPERTY).

Referring to section 1*b* of Consolidated Supply Letters Nos. 1 to 23, inclusive, attention is invited to the following:

Much additional time is required in handling vouchers on account of the signature of the officer being illegible. The name of the officer signing the paper should in all cases be typewritten under his signature, or in the brief of the voucher, unless the signature is clearly legible. In this connection attention is called to the provisions of paragraph 779, Army Regulations.

Invoices and receipts should both be promptly forwarded, as required by paragraph 496, Manual for the Medical Department, 1916, and the articles mentioned in such vouchers and also in the returns of medical property should be listed in the same order, and under the same name, as shown in the supply table of the Manual for the Medical Department as required by paragraph 475.

The name of the issuing officer should in all cases be given on the brief of the receipts for medical property, in order that there may be no uncertainty in this office to whom credit for the transfer should be given.

Articles must be entered upon all requisitions, invoices, and receipts, also upon property returns, in the following order:

1. All articles of regular issue in accordance with the arrangement of the supply table.
2. Additional articles as follows:
   (*a*) Drugs, medicines, and antiseptics.
   (*b*) Stationery.
   (*c*) Miscellaneous hospital supplies.
   (*d*) Surgical instruments and appliances.
   (*e*) Laboratory supplies (including chemicals)
   (*f*) X-ray supplies.

If this procedure is followed, the time required in checking requisitions, vouchers, and the returns will be materially reduced and the procedure simplified. It is therefore enjoined upon all officers to see that these instructions are strictly followed.

Officers who are accountable for post, field, dental, and veterinary supplies should keep each in a separate section of the property return, but vouchers pertaining thereto should be numbered in one series.

INVOICES (DISCREPANCIES BETWEEN INVOICE AND QUANTITY OF SUPPLIES RECEIVED).

The following additional instructions are issued in connection with section 17*b* of Consolidated Supply Letters Nos. 1 to 23, inclusive:

Numerous cases have occurred in which officers on receipt of property, part of which is missing, have altered the receipt by striking out the articles not received.

This procedure is not contemplated by Army Regulations, and it entails unnecessary correspondence on the part of both this office and the issuing depot.

The proper procedure in such cases, where property is not received within a reasonable time, is to call for the action of a surveying officer. Testimony from the issuing officer should in all cases be called for and taken into consideration before conclusions are reached by the surveying officer. In this connection attention is called to the provisions of law that when a transportation company accepts property for transportation it becomes responsible for its safe delivery and is not to be relieved of such responsibility on account of faulty packing.

Unless the issuing officer is found to be responsible for the shortage, the receiving officer should receipt in full for the property issued and use the report of survey as a voucher for dropping the missing articles from his return of medical property, and the value of the lost or damaged property should be charged to the transportation company.

In this connection see paragraphs 668, 712, and 721, Army Regulations

PENCILS, HAIR AND POTASSIUM PERMANGANATE.

Notwithstanding sections 21 and 23 of Consolidated Supply Letters Nos. 1 to 23, inclusive, reports are constantly received at the various depots that hair pencils and potassium permanganate have not been furnished upon approved requisitions or that they are missing from chests, etc.

Although requisitions may be approved and sent to the depots for issue which may include these articles, they will for the present not be furnished.

When found short in the various chests, etc., issued, this shortage should not be reported to the issuing officer.

Supply Letter No. 25. MAY 7, 1918.

CONSERVATION IN THE USE OF ENVELOPES.

The Post Office Department has advised that it is experiencing increasing difficulty in securing sufficient envelopes for Government business. It is therefore urged upon everyone to be as economical in the use of envelopes as is possible in properly carrying on the department's business.

Where more than one communication is sent to a certain individual or office in one day, one envelope should be used wherever possible for all. For internal or interdepartmental business, envelopes should not be used, except in the case of confidential matter. For communications, not confidential, between offices at the various camps, etc., where these offices are not located under the same roof, large heavy manila envelopes may be used, not to be sealed, and to be returned to the sending office for use again.

Supply Letter No. 26. JUNE 29, 1918.

CONSERVATION OF GAUZE AND OTHER SURGICAL SUPPLIES.

1. In view of the enormous increase in the requirements for gauze bandages and other surgical supplies, every effort should be made to reduce the amount of these supplies used in the operating rooms, dressing rooms, and wards.

2. The gauze and bandages can be washed and sterilized for reuse, and this should be done repeatedly as long as they can be used. They should be made in the most advantageous size and shape for conservation. Rubber gloves which have been punctured or have small holes should

be patched and tested for leaks and sterilized. Where repairs have been repeatedly made and the gloves are not considered safe for major operative work, they may be used for assistants and ward dressing. Catgut can be conserved by adopting an economical method of tying. Adhesive plaster should be used as sparingly as practicable. Ether may be conserved by using local anesthetics, novocaine, procaine, or apothesine wherever practicable.

3. Conservation of surgical supplies has already been undertaken in some of the base hospitals, and the results have been most satisfactory. One of these hospitals reports for April, 1918, that 282 operations were performed and that the amount of supplies used was less than one-third of the previous month. (See attached report.)

4. While the varying equipments of different hospitals may modify the method used for the reclamation of gauze and bandages, the following method is suggested: Each surgical ward and dressing room should be equipped with two galvanized-iron buckets with a cover, lined by a paper bag, in one of which should be put all blood-stained and slightly soiled dressings; in the other, pus-stained dressings. These buckets should be taken twice daily—oftener, if necessary—to the room where dressings are washed. If no laundry equipment or laundry machinery is available, the gauze and bandages can be washed by hand, using heavy rubber gloves for this purpose. Previous to washing, the slightly stained and blood-stained dressings should be soaked for 12 hours in cold water containing one-tenth of 1 per cent of chloride of lime; the pus-stained dressings in a solution containing one-tenth of 1 per cent chloride of lime and one-half of 1 per cent of washing soda. If washed by hand, these dressings should be boiled for at least one hour. Where laundry machinery is available, or in the larger hospitals, which are now being furnished with equipment for the reclamation of re-use knitted gauze, ordinary gauze and bandages may also be reclaimed. The gauze and bandages should be put in mesh bags, soaked for 12 hours as directed above, boiled for one hour, transferred to the washing machine, and, if a rotary tumbler is available, can be dried in the bags in this tumbler. If this is not available, gauze and bandages can be passed through a wringer and hung on lines to dry. After drying, dressings should be sorted, folded, put in packages, and sterilized in the ordinary way for 30 minutes at 15 to 30 pounds pressure on two successive days. Careful bacteriological tests should be made from time to time to test its sterility.

5. This office desires practical suggestions for the best methods of reclaiming absorbent cotton for re-use.

6. It is only by the cooperation of the surgical staff of each hospital that the desired conservation of supplies can be brought about. You should therefore impress upon the medical officers the necessity for the utmost care in the use of these supplies and for careful supervision of such use by their subordinates.

7. It is directed that a monthly report of the amount of gauze, bandages, cotton, rubber gloves, catgut, adhesive plaster, and anesthetics used be returned to this office, with the supplemental report of surgical operations directed in the letter from the Surgeon General's Office, March 20, 1918.

8. This office has made somewhat extensive investigations with a view to developing satisfactory substitutes for absorbent cotton and gauze and gauze bandages. Certain satisfactory wood-fiber substitutes for cotton have been found and one of these, known as Cellucotton, is now being provided in large quantity.

Crimped paper bandages are also being tried, and reports to this office indicate that they are just as good as gauze bandages in all "dry" cases.

These substitutes cost just about one-half as much as absorbent cotton and gauze bandages. The lower cost, however, is not the only advantage to be derived from the use of these substitutes. It opens up another source of supply and makes it easier for the supply division of this office to meet the overseas demand for surgical dressings.

It is therefore directed that wherever possible substitutes for cotton and gauze and gauze bandages be used. Requisitions for these articles should be made in the usual way.

June 29, 1918.

REPORT FROM A CANTONMENT HOSPITAL FOR APRIL, 1918.

Amount of supplies used during the month of April:

Gauze: 600 yards, drawn from the supply room, of which amount 350 yards are still on hand for daily dressings, making a total wastage for the month of 250 yards.

Before undertaking conservation, the average monthly wastage was 3,000 yards, making a saving in this one hospital for one month of 2,750 yards.

Cotton, absorbent; 2 pounds, used by anesthetists.

Cellucotton: 14 rolls.

Rubber gloves: 30 pairs used. All now serviceable and in daily use.

Catgut, chromic and plain: 312 tubes—a fraction over one tube for each operation. This saving was accomplished by using instruments for tying. (Similar to the method described by Grant.)

Ether: 421 cans, used for 250 cases of general anesthesia.

Adhesive plaster: 42 spools.

At this hospital the following orders were issued concerning the making of dressings:

Empyema pads shall be made as follows:

1. Cellucotton or old gauze or old cotton, 8 by 6; gauze covers, 18 by 18.

Abdominal pads for first dressings, to be used in hospital, shall be made as follows:

1. Cellucotton or resterilized gauze, 8 by 6; gauze covers, 10 by 18.

Sponges for operations shall be made as follows:

1. Single layer of gauze, 24 by 18, folded so as to make sponge 4 by 4.

Abdominal pads or sponges shall be made as follows:

1. Gauze shall be folded so as to make a sponge or pad 9 by 12.
2. All sponges shall have a tape 6 inches long attached to one corner and an iron ring (harness) attached.

All dressings must be saved, rewashed, and will be sent back to operating room after going through high-pressure sterilization.

All dressings must be sterilized twice after being double wrapped.

Supply Letter No. 27. AUGUST 8, 1918.

RECEIPTS FOR MEDICAL PROPERTY ISSUED.

This office has received complaints from supply depots that receipts for medical property issued by them are returned to them with check marks opposite the various items on the receipt. As these receipts are to be checked item by item, both at the depots and in this office, they should be sent in without check marks. The body of these receipts are ordinarily carbon copies of the issuing officer's invoice, and in case the receiving officer desires to check the vouchers with the property actually received, such checking should be done on his retained invoice and not on the receipt signed by him.

EXTRA SECTIONS FOR FILING CABINETS.

Requisitions for extra sections for filing cabinets, etc., should state, in all cases, the kind of filing cabinet on hand, giving the name of the manufacturer and, if possible, catalogue number. This information is required by the purchasing officer so that he may supply the proper additional sections.

WEB BELTS.

Paragraph 38, Supply Letters Nos. 1 to 23, inclusive, is revoked, and the following instructions substituted therefor:

Belts, web, medical officers' (par. 864), and belts, web, enlisted men, Medical Department (par. 865), are now the property of the Medical Department.

Belts, web, medical officers' (par. 864), will hereafter be issued to officers on memorandum receipt. One copy of receipt will be forwarded to the Surgeon General's Office by receiving officer; the accountable officer will forward one with his return of medical property as authority to drop same, retaining a copy for his file. When a medical officer is separated from the service, the web belt in his possession will be turned in to the nearest accountable medical supply officer, who will give receipt for same, one copy to be forwarded to the Surgeon General's Office and one retained. The property will be taken up on his return.

An officer will not be relieved from responsibility for belts in his possession for which he has given a memorandum receipt until he has returned the property to a proper accountable officer.

Belts, web, enlisted men, Medical Department (par. 865), will be charged on Form 637, A. G. O. The accountable officer will prepare invoices in duplicate on Form 28 M. D. The receiving officer will certify thereon that the belts were received and charged on Form 637, giving names of enlisted men. The duplicate receipt will constitute the voucher on which the accountable officer will drop from his returns the articles enumerated. When an enlisted man is separated from the service the responsible officer will prepare Form 28 in duplicate, listing thereon the medical property in soldier's possession, and turn same over to an officer accountable for medical property, who will take the property up on his return.

All belts now in possession of officers and enlisted men held by company or detachment commanders on memorandum receipts will be dropped by the accountable officers after the officer who signed the receipts complies with these instructions.

DENATURED ALCOHOL.

It is directed that no further purchases of denatured alcohol be made without special authority from this office. Ethyl alcohol is cheaper and may be substituted for the denatured alcohol wherever the use of the latter is authorized.

GAUZE SPONGES.

Owing to the great increase in the cost of sponges, gauze, no further issues thereof will be made after the present stock is exhausted. Cellucotton sponges, prepared locally, will be substituted for venereal prophylaxis work and for all other purposes for which the gauze sponges of the supply table have hitherto been used.

REQUESTS FOR PURCHASES.

In making requests for purchases, the cost must, in all cases, be stated.

Supply Letter No. 28. OCTOBER 9, 1918.

1. SPECIFICATIONS FOR FLOOR OILS.

Oils purchased by the Medical Department for hospital floor uses should conform as nearly as possible to the following specifications:

The oil is to be a pure, heavy mineral oil; that is to say, it must be totally free of all fatty oils and waxes, tar oil, rosin oil or rosin, etc.

1. It is to be clear and of a color not darker than light brown.
2. It is to be odorless, or, at most, to possess not more than a faint kerosenelike odor.
3. It is to be of neutral reaction.
4. Its viscosity at 20° C. is to be not less than 4, compared with distilled water. Other characters being equal, preference will be given to oil of high viscosity.
5. It is to contain not more than 2.75 per cent by weight of light (volatile) oils, determined by heating the oil on the steam bath in the open dish during six hours.

2. RED CROSS SUPPLIES.

All supplies received from Red Cross organizations for use of Medical Department of the Army will be taken up and accounted for on returns of medical property.

A list of the articles received will be forwarded to the Surgeon General's office.

Request for Red Cross supplies must be approved by the commanding officer of Medical Department organizations or division or camp surgeons of camps.

3. QUOTING RECORD NUMBERS ON DISBURSEMENT VOUCHERS.

All disbursement vouchers covering purchases on authority from this office must quote the supply division record number, which will appear in the upper right-hand corner of letters and at the beginning of telegrams.

4. PRICE ON METAL COVERS FOR ROYAL TYPEWRITERS.

The contract price with the Royal Typewriter Co. for the fiscal year 1919 on typewriter metal covers, as approved by the Treasurer of the United States, and appearing in the schedule of supplies of the General Supply Committee, is as follows:

	Each.
Metal covers for Royal Nos. 5 and 10, commercial carriage	$3.00
Metal covers for Royal No. 10, with 14-inch carriage	3.50
Metal covers for Royal No. 10, with 18-inch carriage	4.15

These prices include baseboards.

5. CONSERVATION OF EMPTY BOTTLES.

Due to the scarcity and great demand for all kinds of bottles, the following instructions relative to the salvage of empty bottles will be complied with:

1. All empty bottles will be turned over to the medical supply officer at camps and hospitals before turning in; these bottles will be throughly washed and dried.

2. The supply officer will carefully assort all bottles received and will make local issues of reclaimed bottles whenever possible.

3. When large quantities have accumulated report will be made to this office.

6. EMPTY BOXES.

Empty packing boxes will be carefully taken apart with a nail puller and preserved for future use; the sides, top, and bottom, when taken apart, should be fastened between the ends by driving a few nails through the boards to keep them intact.

Where boxes of different sizes are received and sufficient storage space is available they may be nested.

Report should be made to this office for proper disposition upon accumulation of a carload of empty servicable boxes.

7. REQUISITIONS.

Articles appearing on both post and field supply tables will be applied for on post requisitions only, with the following exceptions:

First-aid packets.—Litters and accessories, the accessories to consist of the following: Poles, canvas, braces, straps, slings, tacks, screws, rings, studs.

8. ALLOWANCES OF MEDICAL SUPPLIES FOR THREE MONTHS FOR ORGANIZATIONS IN CAMPS.

It is expected that the allowance of expendable articles will be sufficient to cover all ordinary requirements for three months.

Nonexpendable articles will be replaced only as they become unservicable. With proper care most of them should remain in serviceable condition for several years.

When supplies are exhausted, or their exhaustion is imminent, a renewal thereof should be asked for on special requisition forwarded to the division surgeon.

1. Allowance for one regiment of Infantry.
2. Allowance for one regiment of Artillery or Engineers.
3. Allowance for one machine-gun battalion (two companies).
4. Allowance for one machine-gun battalion (four companies).
5. Allowance for one signal battalion.
6. Allowance for one division headquarters.
7. Allowance for trains and military police.
8. Allowance for one regiment of Cavalry.

Allowance of medical supplies for three months for organizations in camps.

Articles (nonexpendable articles in capital letters).	1	2	3	4	5	6	7	8
Strength of organizations	3,834	1,697	293	776	488	238	2,292	1,902
Medicines and antiseptics.								
Acetphenetidinum (phenacetin), 324-mgm. tablets, 500 in bottle, bottles	12	5	2	2	1	1	4	3
Acidum acetylsalicylicum, 324-mgm. tablets, 500 in bottle do	10	4	2	3	1	1	3	3
Acidum boricum, 324-mgm. tablets, 500 in bottle do	12	5	2	2	1	1	4	3
Æther, ¼ pound in tin tins	15	6	2	3	1	1	2	2
Alcohol gallons	20	8	3	4	2	2	5	5
Apomorphinæ hydrochloridum, 6-mgm. hypo. tablets. 20 in tube, tubes	2	1	1	1	1	1	1	1
Argenti nitras crystals, 1 ounce in bottle bottles	2	1	1	1	1	1	1	1
Argenti nitras fusus, 1 ounce in bottle do	2	1	1	1	1	1	1	1
Argyrol (or equivalent), 1 ounce in bottle do	2	1	1	1	1	1	1	1
Atropinæ sulphas, 0.65-mgm. hypo. tablets, 20 in tube tubes	1	1	1	1	1	1	1	1
Barbital, 324-mgm. tablets, 500 in bottle bottles	3	2	1	1	1	1	2	2
Bismuthi subcarbonas, 324-mgm. tablets, 500 in bottle do	2	1	1	1	1	1	1	1
Capsicum, 32-mgm. tablets, 500 in bottle do	1	1	1	1	1	1	1	1
Chloralum hydratum, 324-mgm. tablets, 500 in bottle do	1	1	1	1	1	1	1	1
Chloroformum, ¼ pound in tin tins	20	8	3	4	2	1	4	4

Allowance of medical supplies for three months for organizations in camps—Continued.

Articles (nonexpendable articles in capital letters)—Continued.	1	2	3	4	5	6	7	8
Strength of organizations	3,834	1,697	293	776	488	238	2,292	1,902
Medicines and antiseptics—Continued.								
Cocaine hydrochloridum, 10-mgm. hypo. tablets, 20 in tube...tubes		4	2	2	1	1	2	2
Codeina, 32-mgm. tablets, 500 in bottle...bottles	4	2	1	1	1	1	2	2
Collodium, 1 ounce in bottle...do	16	8	3	4	2	1	4	4
Epinephrine hydrochloride, 1-mgm. tablets, made soluble by the addition of boric acid, 25 in tube...tubes	6	2	1	1	1	1	2	1
Glycerinum, 1 quart in bottle...bottles	6	3	2	2	1	1	2	2
Hexamethylenamina, U.S.P. 324-mgm. tablets, 500 in bottle...do	3	2	1	1	1	1	2	1
Hydrargyri chloridum corrosivum tablets (antiseptic) (par. 902), 250 in bottle...bottles	6	3	1	2	1	1	2	1
Hydrargyri chloridum mite, 32-mgm, tablets, 1,000 in bottle...do	44	2	1	1	1	1	2	1
Ichthyolum (or equivalent), 3 ounces in bottle...do	6	3	1	1	1	1	2	1
Iodoformum, U.S.P., ¼ pound in bottle...do	5	3	2	2	2	1	3	3
Iodum-potassii iodidum, in tube...tubes	200	100	30	40	20	10	30	50
Iodine swabs, 6 in box...boxes	100	50	16	24	12	6	16	25
Linimentum rubefaciens, tablets (par. 902), 250 in bottle...bottles	20	10	3	4	2	1	10	6
Liquor formaldehydi, 1 gallon in jug...jugs	20	10	3	4	2	1	10	6
Magnesii sulphas, 1 pound in tin...tins	90	36	12	16	5	3	36	24
Mistura glycyrrhizæ composita tablets (par. 902), 1,000 in bottle...bottles	30	12	4	5	2	1	12	8
Morphinæ sulphas, 8-mgm. hypo. tablets, 20 in tube...tubes	30	12	4	5	2	1	12	8
Morphinæ sulphas, 8-mgm. tablets, 500 in bottle...bottles	5	2	1	1	1	1	2	1
Nitroglycerin, 0.65-mgm. tablets, 500 in bottle...do	2	1	1	1	1	1	1	1
Normal saline solution, tablets (par. 902), 100 in bottle...do	2	1	1	1	1	1	1	1
Oleum ricini, 1 quart in bottle...do	24	9	3	4	1	1	9	6
Oleum terebinthinæ rectificatum, 1 quart in bottle...do	18	8	2	3	1	1	8	5
Petrolatum, 1 pound in tin...tins	30	12	4	5	2	1	12	8
Phenol, ½ pound in bottle...bottles	32	12	4	5	2	1	12	8
Phenylis salicylas, 324-mgm. tablets, 500 in bottle...do	4	2	1	1	1	1	2	1
Pilulæ aloini compositæ (or tablets) (par. 902), 500 in bottle...do	12	5	1	2	1	1	5	2
Pilulæ catharticæ compositæ, 1,000 in bottle...do	6	3	1	1	1	1	3	2
Pilulæ ferri carbonatis, 1,000 in bottle...do	4	2	1	1	1	1	2	1
Plumbi acetas, 130-mgm. tablets, 500 in bottle...do	5	2	1	1	1	1	2	1
Potasii iodidum, 324-mgm. tablets, 500 in bottle...do	4	2	1	1	1	1	2	1
Protargol (or equivalent), 1 ounce in bottle...do	40	18	6	8	2	2	18	12
Pulvis ipecacuanhæ et opii, 324-mgm. tablets, 500 in bottle...do	6	3	1	1	1	1	3	2
Quininæ dihydrochloridum, 32-mgm. hypo. tablets, 20 in tube...tubes	9	4	1	1	1	1	4	2
Quininæ sulphas, 200-mgm. tablets, 1,000 in bottle...bottles	8	3	1	2	1	1	4	8
Sapo mollis (green soap), ½-pound bottle in case...do	30	12	4	5	2	1	12	3
Sodii bicarbonas, 324-mgm. tablets, 1,000 in bottle...do	10	4	1	2	1	1	4	2
Sodii bicarbonas et mentha piperita (par. 902), tablets, 1,000 in bottle...bottles	3	2	1	1	1	1	2	2
Sodii bromidum, U.S.P., 324-mgm. tablets, 500 in A. C. bottle with stopper paraffined...bottles	8	3	1	1	1	1	3	2
Sodii carbonas monohydratus, for surgical use, ½ pound in bottle...bottles	1	1	1	1	1	1	1	1
Sodii salicylas, 324-mgm. tablets, 500 in bottle...bottles	6	3	2	2	2	1	3	2
Spiritus ammoniæ aromaticus, ½ pound in bottle...do	16	7	2	3	1	1	3	5
Strophanthinum 0.5-mgm. hypo. tablets, 20 in tube...tubes	1	1	1	1	1	1	1	1
Strychinæ sulphas, 1-mgm. hypo. tablets, 20 in tube...do	60	25	8	12	4	3	20	16
Sulphur lotum, 1 pound in tin or carton...tins	3	1	1	1	1	1	1	1
Tinctura opii, ½ pound in bottle...bottles	2	1	1	1	1	1	1	1
Trochisci ammonii chloridi, 250 in bottle...do	6	3	1	2	1	1	3	2
Unguentum hydrargyri, 10 per cent mercury with petrolatum base...tins	10	5	2	3	1	1	5	3
Unguentum hydrargyri chloridi mitis, 30 per cent, ½ pound in bottle...bottles	50	20	7	9	3	2	20	12
Zinci oxidum, powder, ½ pound in bottle, tin or carton...do	4	2	1	1	1	1	2	1
Zinci sulphas, 324-mgm. tablets, 500 in bottle...do	2	1	1	1	1	1	1	1

NOTE.—This table supersedes that contained on pages 22, 23, 24, and 25, Supply Letters Nos. 1 to 23, inclusive.

9. THE FOLLOWING IS PUBLISHED FOR THE INFORMATION AND GUIDANCE OF ALL CONCERNED.

FORMULÆ, VETERINARY.

Adrenalin et cocaina comp. hypodermic tablets:		
Adrenalin chlorid	gms	0.0299
Cocainæ hydrochloridum	do	.1195
Acidum boricum	do	.0149
Pilulæ aloini compositæ (equine purgative):		
Aloinum	do	4.250
Hydrargyri chloridi mite	do	1.000
Strychninæ sulphas	do	.016
Oleoresina zingiberis	do	.325
Plumbi acetas compositus (compressed tablets):		
Plumbi acetas	do	3.110
Alumen	do	1.037
Zinci sulphas	do	2.074

CONTENTS OF VETERINARY CHESTS.

VETERINARY HOSPITAL CHEST NO. 1.

(All contents supplied by the Medical Department.)

BISTOURY, P. P. CURVED	number	1
BISTOURY, P. P. STRAIGHT	do	1
BISTOURY, SHARP POINTED CURVED	do	2
BOILER, INSTRUMENT, 16-INCH	do	1
BOTTLES, MIXING, 4-OUNCE, WIDE MOUTH, with rubber corks to fit	do	6
BRUSHES, HAND, FIBER	do	6
Candles	do	15
CASE HOOF	do	4
CASES, hypodermic tablets, 9 vials filled, 2 empty [1]	do	24
CASE, HYPODERMIC SYRINGE, 10 c. c.[2]	do	2
CATHETER, HORSE, RUBBER, SIZE No. 20 AMER	do	1
CURETTE, QUITTOR, SHARP, OPEN BOWL	do	1
CURETTE, 7½ INCHES	do	1
DIRECTOR, GROOVED, 6-INCH	do	2
FORCEPS, DISSECTING	do	12
FORCEPS, DRESSING, DOUBLE-CURVED, 10-INCH	do	10
FORCEPS, HEMOSTATIC	do	12
FORCEPS, HEMOSTATIC, HOPKINS	do	6
FORCEPS, RONGUER, LUER'S, CURVED	do	1
IRRIGATORS, 4-QUART, ENAMELED, SEAMLESS, COMPLETE	do	6
MIRROR, HEAD	do	1
NEEDLES, SETON	do	1
Needles, surgical, in paraffin envelopes, 6 in package	packages	10
POWDER DUSTER, HARD RUBBER	number	2
PROBES, FLEXIBLE, 10-INCH	do	6
PROBES, FLEXIBLE, 4-INCH	do	6
RAZORS	do	6
RAZORS, HONE FOR	do	1
RAZOR, STROP FOR	do	1
SALINE APPARATUS	do	1
SCALPELS, SMALL	do	2
SCALPELS, MEDIUM	do	1
SCALPELS, LARGE	do	2
SCISSORS, DRESSING, 6½-INCH	do	12
SHEARS, FETLOCK	do	4
SPATULA, 6-INCH	do	1
Suture, silk, braided, No. 13	spools	2
Suture, silk, braided, No. 14	do	2
Suture, silk, braided, No. 15	do	15
Suture, linen, merzon, in skeins	skeins	12
Sutures, tape, sterilized, 18 inches each, 2 pieces in package	packages	24
Test tubes, 3 in nest in TIN CONTAINER	container	1
Thermometer, clinical, veterinary, in case	number	30
TRAYS, INSTRUMENTS, WHITE ENAMELED, SEAMLESS, NESTED IN SETS OF 4	sets	1
TREPHINE, NYE'S ⅞-INCH HEAD	number	1
TREPHINE, NYE'S EXTRA HEADS FOR, 1-INCH	do	1
TROCARS AND CANULAS, SETS	do	4
TUBE, TRACHEA	do	1
TUBE, TRACHEA, BOVETTE'S	do	1
Tubing, rubber, ¼-inch	yards	20

VETERINARY HOSPITAL CHEST NO. 2.

(All contents supplied by the Medical Department.)

Acidum boricum, powdered, 1 pound, in bottle	bottles	1
Chloroformum, ¼ pound in tin	tins	20
Glycerinum, 3 pints in tin	do	3
Hydrargyri chloridum corrosivum tablets, 250 in bottle	bottles	4
Hydrargyri iodidum rubrum, 1 pound in bottle	do	1
Petrolatum, 3 pounds in tin	tins	3
Phenol, ½ pound in bottle	bottles	16
SCALES AND WEIGHTS, TROEMER'S	number	1
Zinci oxidum, ¼ pound in bottle	bottles	16

VETERINARY HOSPITAL CHEST NO. 3.

(All contents supplied by the Medical Department.)

Acidum boricum, powdered, 1 pound in bottle	bottles	8
Chloralum hydratum, 4 drams in ball, 6 in tube	tubes	42
Cupri sulphas, ¼ pound in tin	tins	60
Hydrargyri chloridum mite, 30-grain tablets (100 in bottle)	bottles	15
Pilulæ aloini comp. (equine purg.), 12 capsules in package	packages	10

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[1] Until present stock is exhausted the following will be issued:

1 apomorphine	$\frac{1}{10}$ grain.
3 arecoline	1 grain.
2 cocaine hydrochlor	2 grains
1 glonoin	$\frac{1}{10}$ grain.
5 strychnine sulph	½ grain.

[2] Until present stock is exhausted, syringe, hypodermic, 5 c. c., will be issued.

VETERINARY HOSPITAL CHEST NO. 4.

(All contents supplied by the Medical Department.)

BASINS, GRANITE, 2-QUART	number	6
CASE, POST MORTEM, VETERINARY	do	1
CLIPPERS, HORSE, HAND	do	2
FLOATS, LOCK, STRAIGHT JOINT	do	2
FLOATS, LOCK, ANGULAR	do	2
Floats, lock, extra blades for, file	do	24
Floats, lock, extra blades for, rasp	do	48
GRADUATES, ENAMELED, 500 C. C	do	4
HOBBLES, ENGLISH, COMPLETE	sets	2
Soap, Ivory	cakes	25
SYRINGES, METAL, DOSE, 2-OUNCE	number	2
Syringes, metal, dose, 2-ounce, pipes for two sizes, of each	do	4
TWINE, IN BALL, COARSE	ball	1

VETERINARY HOSPITAL CHEST NO. 5.

(All contents supplied by the Medical Department.)

Bandages, muslin, roller, compressed, 5 yards by 3 inches [1]	number	325
Cotton, absorbent, one pound in roll	pounds	24

VETERINARY HOSPITAL CHEST NO. 6.

(All contents supplied by the Medical Department.)

BOOKS, NOTE, MANIFOLDING, 4 BY 6 INCHES, BINDERS	number	3
Books, note, manifolding, 4 by 6 inches, fillers	do	18
Cotton, absorbent, 1 pound in roll	pounds	3
Envelopes, official, letter	number	25
Gauze, plain, bleached, 50 yards in bolt	bolts	6
Pencils, indelible	number	6
Plaster, adhesive, z. o., 5 yards by 2½ inches, in spool	spools	3
Oakum, surgical, 1 pound in package	packages	12
Requisition blanks, Form No. 35	number	25

VETERINARY HOSPITAL CHEST NO. 7.

(All contents supplied by the Medical Department.)

MOLAR CUTTERS, IMPROVED, OPEN [1]	number	1
MOLAR CUTTERS, IMPROVED, HALF OPEN [1]	do	1
MOLAR CUTTERS, IMPROVED, CLOSED [1]	do	1
MOLAR EXTRACTORS, IMPROVED, UPPER [1]	do	1
MOLAR EXTRACTORS, IMPROVED, LOWER [2]	do	1
MOLAR SEPARATOR, CLOSED [1]	do	1
MOLAR CUTTERS, EXTRACTORS, SEPARATORS, HANDLES FOR [1]	sets	1
SPECULUM, MOUTH	number	1

VETERINARY HOSPITAL CHEST NO. 8.

(All contents supplied by the Medical Department.)

CLIPPERS, MACHINE	number	1
Clippers, machine, extra blades for	do	12
Clippers, machine, extra heads for	do	2

VETERINARY FIELD UNIT CHEST.

(All contents supplied by the Medical Department.)

Acidum boricum, powdered, 1 pound bottle	bottles	1
Alcohol, 3 pints in tin	tins	1
Ammonium carbonas, 4 drams, in ball, 6 in tin	do	4
Bandages, muslin, roller, compressed, 5 yards by 3 inches [1]	number	100
Chloralum hydratum, 4 drams in ball, 6 in tube	tubes	3
Cotton, absorbent, sterlized, in 1-ounce package	packages	32
Gauze, sublimated, 2 half-yard lengths in package	do	12
Hydrargyri chloridum corrosivum tablets, 250 in bottle	bottles	1
Iodum-potassii iodidum	ampules	50
Liquor cresolis comp., 8 ounces in bottle	bottles	1
Oakum, surgical, 1 pound in package	packages	2
Petrolatum, 12 ounces in tin	tins	1
Pilulæ aloini comp. (equine purgative) 12 capsules in package	packages	2
Plumbi acetas comp., C. T. 50 in bottle	bottles	1
Soap, Ivory	cakes	3
Suture, silk, braided, No. 14	spools	1
Thermometers, clinical, veterinary, in case	number	2
TOWELS, HAND	do	2
TRAY, METAL, W. E., 8¾ BY 5½ BY 2 INCHES	do	1
Vial, 2-ounce, empty, with rubber stopper, IN TIN CASE, for iodin	do	1

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[1] Until present stock is exhausted, bandages 3 yards by 4 inches will be issued.

[2] Case, dental, in roll, will be issued until present stock is exhausted and substitution made.

VETERINARY OFFICER'S FIELD CHEST.

(Issuable to each veterinary officer detached. Container, wooden, iron-bound box, approximately 20 by 9 by 10 inches; weight filled 40 pounds. All contents supplied by the Medical Department.)

Acidum boricum, powdered, 1 pound in bottle	bottles	1
Alcohol, 3 pints in tin	tins	1
Bandages, muslin, roller, compressed, 5 yards by 3 inches [1]	number	48
CASE, POCKET, VETERINARY	do	1
CASE, hypodermic tablets, 9 vials filled and 2 empty	do	1
CASE, RECTAL PUMP	do	1
Cotton, absorbent, in 1-pound roll	pounds	2
Envelopes, official, letter	number	25
FLOATS, LOCK, STRAIGHT JOINT	do	1
FLOATS, LOCK, ANGULAR	do	1
Floats, lock, extra blades for, file	do	2
Floats, lock, extra blades for, rasp	do	2
Gauze, sublimated, 2 half-yard lengths in package	packages	12
GRADUATE, ENAMELED, 500 C. C	number	1
Hydrargyri chloridum corrosivum tablets, 250 in bottle	bottles	2
Iodum-potassii iodidum	ampules	50
Oakum, surgical, 1 pound in package	packages	1
Paper, writing, letter, 100 sheets in pad	pads	1
Pencils, indelible	number	4
Petrolatum, 12 ounces in tin	tins	1
PILL-TILE	number	1
Pilulæ aloini comp. (equine purg.), 12 capsules in package	packages	2
Pins, safety	paper	1
Plumbi acetas comp., C. T., 50 in bottle	bottles	2
Requisition blanks, form No. 35	number	25
Report blanks, Veterinary Corps	do	25
SPATULA, 6 INCHES	do	1
Suture tape, sterilized, 18 inches each, 2 pieces in package	packages	1
SYRINGE, HYPODERMIC, 10 C. C	number	1
SYRINGE, METAL, DOSE, 2 OUNCES	do	1
Syringe, metal, dose, extra pipes for, 2 sizes, of each	do	1
Suture, linen, merzon, in skein [2]	skeins	3
Thermometer, clinical, veterinary, in case	number	1
TINS, containing ammonium carbonas balls	do	2
Tube, containing chloral hydrate balls	do	1
TUBE, TRACHEA	do	1
Twine, in ball, coarse	do	1
Vial, 2-ounce, empty, for iodine (rubber stopper), in tin case	do	1

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[1] Until present stock is exhausted, bandages 3 yards by 4 inches will be issued.
[2] Supplied in packages until present stock is exhausted.

Equipments of Veterinary Units.

VETERINARY FIELD UNIT.

Articles.	Quantity.	Source of supply.[1]
Chest, veterinary field unit ... number	1	M
Chest, veterinary officers', field ... do	1	M
HORSES, RIDING ... do	4	Q
HORSE EQUIPMENTS, OFFICERS', COMPLETE ... do	1	O
Horse equipments, enlisted men's, complete ... do	3	O
Pistols ... do	4	O
Wallets, farriers' ... do	2	M
Wallets, veterinary officers' ... do	1	M

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[1] M—Medical Department. Q—Quartermaster Corps. O—Ordnance Department.

DIVISIONAL MOBILE VETERINARY SECTION.

Blacksmith's kit, complete ... number	1	O
Boxes, pack mule, empty ... do	2	M
Chests, veterinary field unit ... do	4	M
Chests, veterinary officers', field ... do	1	M
Horses, riding ... do	12	Q
Horse equipments, officers', complete ... do	1	O
Horse equipments, enlisted men's, complete ... do	11	O
Mules, draft ... do	4	Q
Mules, pack ... do	1	Q
Nails, horseshoe, number (16 nails for each mounted officer and each mounted man as a part of his equipment)	....	Q
Nails, horseshoe (4 and 5) of each ... pounds	3	Q
Pistols ... number	22	O
Saddles, pack ... do	1	M
Shoes, horse and mule	....	Q
(1) Fitted shoes—		
For riding horses, number (1 fore and 1 hind shoe carried by rider for his mount).		
For pack mule, number (1 fore and 1 hind shoe per pack mule; carried in pack).		
For draft mule, number (2 fore and 2 hind shoes per draft mule; carried in wagon).		
(2) Extra shoes—		
For horses ... pounds	36	Q
For pack mules ... do	2	Q
For draft mules ... do	12	Q
Wagon, escort, with harness, complete ... number	1	Q
Wallets, farriers' ... do	2	M
Wallets, veterinary officers' ... do	1	M

EQUIPMENTS OF VETERINARY UNITS—Continued.

CORPS MOBILE VETERINARY HOSPITAL.

Articles.	Quantity.	Source of supply.
Ambulances, two-mule, with harness, complete .... number..	1	Q
Blacksmith's kit, complete .... do....	1	O
Chests, veterinary field unit .... do....	6	M
Chests, veterinary officers' field .... do....	2	M
Horses, riding .... do....	12	Q
Horse equipments, officers', complete .... do....	1	O
Horse equipments, enlisted men's, complete .... do....	11	O
Mules, draft .... do....	6	Q
Nails, horseshoe, number (16 nails for each mounted officer and each mounted man as a part of his equipment)	....	Q
Nails, horseshoe (4 and 5) of each .... pounds..	3½	Q
Pistols .... number..	37	O
Range, field No. 2, complete .... do....	1	Q
Shoes, horse and mule	....	Q
(1) Fitted shoes—		
For riding horses, number (1 fore and 1 hind shoe carried by rider for his mount).		
For draft mules, number (2 fore and 2 hind shoes per draft mule; carried in wagon).		
(2) Extra shoes—		
For horses .... pounds..	36	Q
For draft mules .... do....	18	Q
Wagons, escort, with harness, complete .... number..	1	Q
Wallets, farriers' .... do....	4	M
Wallets, veterinary officers' .... do....	2	M

VETERINARY HOSPITAL.

Articles.	Quantity.		Source.
	Base hospital, 500 patients.	Veterinary hospital, 1,000 patients.	
Ambulance, motor .... number..	1	....	M
Ambulance, two-mule, with harness, complete .... do....	....	1	Q
Anvils, 1 cwt .... do....	5	5	Q
Anvils, blocks for .... do....	5	5	Q
Aprons, horseshoers', leather .... do....	....	5	Q
Axes, with helves .... do....	4	6	Q
Axes, fire, with helves .... do....	4	6	Q
Axes, pick, with helves .... do....	8	8	Q
Bags, nose .... do....	500	1,000	O
Barrows, wheel .... do....	8	16	Q
Blacksmith's kit, complete .... do....	5	5	O
Blankets, horse .... do....	500	1,000	M
Boiler, instrument .... do....	1	2	M
Brooms, corn .... do....	4	8	M
Brooms, stable .... do....	30	60	Q
Brushes, dandy .... do....	250	500	Q
Brushes, hand, fiber .... do....	12	24	M
Brushes, horse .... do....	250	500	Q
Brushes, scrubbing .... do....	72	100	M
Brushes, whitewash, with handle .... do....	20	25	Q
Buckets, canvas, watering .... do....	50	66	O
Buckets, fire .... do....	50	100	Q
Buckets, g. i .... do....	50	100	M
Candles .... pounds..	15	25	M
Canvas, 27 inches wide .... yards..	150	200	Q
Carts, feed, 2-wheeled .... number..	4	8	Q
CASE, THERMO-CAUTERY, ETHER .... do....	1	1	M
CHESTS, TOOL, No. 2 .... do....	1	1	M
Chests, Veterinary, Field Unit .... do....	12	12	M
CHESTS, VETERINARY HOSPITAL .... sets..	1	1	M
CHESTS, VETERINARY OFFICERS', FIELD .... number..	4	7	M
CLIPPERS, HORSE, HAND .... do....	12	24	M
Clippers, horse, hand, blades for .... do....	12	24	M
CLIPPERS, MACHINE .... do....	5	10	M
Clippers, machine, extra heads for .... do....	10	20	M
Clippers, machine, extra blades for .... do....	20	40	M
Coal oil, 5 gallons in tin .... tins..	5	10	Q
COMBS, CURRY .... number..	250	500	O
CROWBARS, 5½ or 6 FEET .... do....	2	2	Q
CUTTERS, WIRE, SMALL .... do....	5	5	M
DIGGERS, POSTHOLE .... do....	3	4	Q
DISINFECTORS, COG GEAR DOUBLE-ACTING SPRAY PUMP, 50-GALLON, MOUNTED ON SKIDS .... number..	1	2	M
DISINFECTORS, HAND, SPRAY .... do....	5	6	M
FLAGS, DISTINGUISHING, VETERINARY HOSPITAL .... do....	1	1	Q
FLAGS, DISTINGUISHING, MOBILE VETERINARY SECTION .... do....	1	1	Q
FORKS, H. & M. STAPLE .... do....	16	32	Q

Equipments of Veterinary Units—Continued.

VETERINARY HOSPITAL—Continued.

Articles.	Quantity.		Source.
	Base hospital, 500 patients.	Veterinary hospital, 1,000 patients.	
FORKS, L. H. (FOUR-TINE)....number..	10	20	Q
GOWNS, OPERATING....do....	5	6	M
Grease, lubricating....pounds..	5	5	Q
GRINDSTONE, KITCHEN, COMPLETE....number..	1	1	M
GUNS, BALLING....do....	2	2	M
HALTERS....do....	600	1,200	Q
Halter shanks, cotton rope, ½-inch, 6-foot lengths....do....	1,500	2,500	Q
HARNESS MENDERS, Q. M. M. append. 14-32....do....	2	2	Q
HORSES, RIDING....do....	4	....	Q
HORSE EQUIPMENTS, COMPLETE....do....	4	7	O
HOSE, RUBBER, 50-FOOT LENGTHS....lengths..	4	6	M
HOSE, RUBBER, METAL CONNECTIONS FOR....number..	4	6	M
JACKS, WAGON....do....	1	2	Q
LAMPS, BRAZING....do....	8	12	M
LAMPS, SPIRIT, GLASS....do....	2	2	M
LANTERNS, COMPLETE....do....	20	40	M
Lanterns, extra globes for....do....	20	40	M
Lanterns, extra wicks for....do....	40	40	M
LEATHER, BLACK, HARNESS....sides..	3	3	Q
LEATHER, BLACK, BRIDLE....do....	3	3	Q
LEATHER, RAWHIDE....do....	1	1	Q
Matches....packages..	2	4	M
MAULS, SLEDGE HAMMER....number..	10	10	Q
MULES, DRAFT....do....	12	26	Q
Nails, 10d....pounds..	12	15	Q
Nails, 20d....do....	12	15	Q
Nails, horseshoe, Nos. 4 and 5....do....	5	10	Q
NOZZLES, HOSE....number..	2	3	M
Oil, lubricating, motor....gallons..	7	9	Q
PAULINS, 20 by 30 FEET....number..	6	8	Q
PINS, METAL, PICKET LINE, 2 FEET 6 INCHES BY 2 INCHES....do....	40	80	Q
Pistols....do....	21	26	O
Posts, picketing....do....	100	200	(1)
RAKES, STEEL....do....	24	34	Q
RANGES, FIELD, COMPLETE....do....	2	3	Q
Rivets and burs, assorted....pounds..	3	5	Q
Rope, cotton, ¾-inch....feet..	150	250	Q
Rope, lash, cotton, ¼-inch....do....	200	400	Q
SCALES AND WEIGHTS, TROEMER'S....number..	1	1	M
Sets, SADDLERS' TOOLS, Q. M. M. append. 14-31....	1	3	Q
SHEARS, FETLOCK....number..	10	15	M
Shoes, horse, No. 2....sets..	100	150	Q
Shoes, horse, No. 3....do....	300	450	Q
Shoes, horse, No. 4....do....	300	450	Q
Shoes, horse, No. 5....do....	50	75	Q
Shoes, mule, No. 2....do....	250	375	Q
Shoes, mule, No. 3....do....	500	750	Q
Shoes, mule, No. 4....do....	500	750	Q
Shoes, mule, No. 5....do....	250	375	Q
Shoes, mule, No. 6....do....	250	375	Q
SHOVELS, L. H....number..	20	30	Q
SHOVELS, SCOOP....do....	25	35	Q
Snaps, halter, extra, for repairs....dozen..	40	50	Q
Soap, common....pounds..	100	200	M
Soap, Ivory....cakes..	36	60	M
STOCKS, METAL....number..	2	2	M
STOVES, COAL-OIL, BLUE-FLAME, ONE-BURNER....do....	1	2	M
Stoves, coal-oil, one-burner, wicks for....do....	2	4	M
TABLE, EQUINE, OPERATING....do....	1	1	M
Thread, saddlers', 3-ounce....balls..	2	3	Q
Thread, saddlers', 10-ounce....do....	2	3	Q
TOWELS, HAND....dozen..	20	30	M
TRUCKS, MOTOR, 1½ TONS....number..	1	1	Q
WAGONS, ESCORT, WITH HARNESS, COMPLETE....do....	3	6	Q
Wallets, farriers'....do....	10	20	M
Wallets, veterinary officers'....do....	4	7	M
Wax, saddlers'....ounces..	1	1	Q
WHIPS, DRIVERS'....number..	3	6	Q

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[1] Obtained locally.

NOTE.—For transportation see Tables of Organization.

Equipments of Veterinary Units—Continued.

DIVISION VETERINARIAN'S OFFICE.[1]

Articles.	Quantity.	Source.
(a) Stationery.		
Envelopes, official, letter....number..	200	M
Paper, blotting....quires..	1	M
Paper, carbon, letter, 100 sheets in box....boxes..	1	M
Paper, manifolding, cap, 250 sheets in package....packages..	1	M
Paper, manifolding, letter, 500 sheets in package....do....	1	M
Paper, typewriter, cap, 250 sheets in package....do....	1	M
Paper, typewriter, letter 500 sheets in package....do....	1	M
(b) Miscellaneous.		
BROOM, CORN....number..	1	M
Candles....do....	24	M
CHAIRS, FOLDING....do....	3	M
DESK, FIELD No. 1....do....	1	M
LANTERNS, CANDLE, FOLDING....do....	2	M
TYPEWRITER....do....	1	M
Typewriter, record ribbons for....do....	2	M

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[1] This same equipment will be issued to veterinary officers commanding veterinary hospitals, corps veterinarians, Army veterinarians, and veterinary inspectors.

WALLET, FARRIER'S (LEATHER).

IN COVER, INSIDE.

Chloralum hydratum, 6 balls in paraffined paper tube....tubes..	1

IN POUCH.

Alcohol, 1 pint in tin....tins..	1
Bandages, muslin, roller, compressed, 5 yards by 3 inches....number..	10
Cotton, absorbent, compressed, 1 ounce in package....packages..	5
Hydrargyri chloridum corrosivum tablets, 25 in hard-rubber tube....tubes..	1
Iodum-potassii iodidum, 10 ampules in carton....cartons..	1
Sutures, assorted, and 3 needles, surgical, in box....boxes..	1

FLAP.

FORCEPS, DISSECTING....number..	1
HOOF KNIFE....do....	1
SCALPEL....do....	1
SCISSORS, DRESSING....do....	1
Thermometers, clinical, veterinary, in case....do....	2

WALLET, VETERINARY OFFICER'S (LEATHER).

BOOK, NOTE, MANIFOLDING, BINDER....number..	1
Book, note, manifolding, filler....do....	1
CASE, hypodermic tablets, veterinary....do....	1
CASE, POCKET, SURGICAL....do....	1
CONTENTS OF POCKET CASE:	
CAUSTIC HOLDER....do....	1
CURETTE....do....	1
FORCEPS, HEMOSTATIC....do....	2
FORCEPS, HEMOSTATIC, HOPKINS, TYPE....do....	1
HOOF GOUGE....do....	1
KNIFE, FOLDING, WITH ONE PROBE POINTED BISTOURY AND ONE SCALPEL...number..	1
KNIFE, FOLDING, WITH ONE SHARP POINTED BISTOURY AND ONE SCALPEL....do....	1
Needles, surgical, in paraffin envelope, 6 in package....packages..	1
PROBE, 10-INCH....number..	1
SCISSORS, DRESSING....do....	1
Sutures, silk, braided, No. 14, in spool....spools..	1
SYRINGE, HYPODERMIC, 10 C. C., with extra tube of needles....number..	1

Supply Letter No. 29.

December 10, 1918.

FORMULA FOR NEUTRAL SOAP TO BE USED IN ALL WASHING MACHINES.

1. This soap is to be prepared in the following manner:

Use 50 per cent of Wyandotte laundry soda or any other good washing soda to 50 per cent of neutral chipped soap. To 5 gallons of water, add 1 pound of chipped washing soap and 1 pound of laundry washing soda. Permit this to boil slowly for a period of from 40 minutes to 1 hour. In weight this will make about 39 pounds of semipaste.

To 50 pounds of linen use 7 gallons of water and 3 pints of the above-named soap or semipaste. This will produce soapsuds to cleanse this amount of linen thoroughly.

CAMPS (MEDICAL DEPARTMENT ADMINISTRATION).

Separate Reports of Sick and Wounded for Regulars and Volunteers (par. 458, M. M. D.).

1. This office has decided that the following changes in regard to separate reports for Regulars, National Guard, and National Army will comply with the purposes of the instructions contained in paragraph 458, M. M. D., and thereby save much labor in their preparation.

2. The register and report to embrace in a single series all cards (Form 52), arranged numerically and chronologically, covering all cases of sickness reported, whether Regulars, National Guard, National Army, civilians, or others.

3. These cards to be distributed at the end of the month by organizations for Regulars, National Guard, National Army, etc., and be tabulated on sheet, Form 51, separately for each class, together with other particulars required by instructions for preparing that sheet. The cards used in each tabulation will be returned with the sheet to which they pertain.

4. This will obviate the necessity of having separate registers and nominal lists, the one series being made to serve the purpose by the use of separate sheets, Form 51, to report all necessary data for the several classes, civilians and all others to be placed on the sheet for Regulars.

5. The nominal check lists, carrying all cases for the period, will be returned with the sheet for Regulars.

(*Cir. Memo., Surgeon General's Office, July 26, 1917.*)

State of Preparedness of Camps and Base Hospitals.

Submit to this office by telegraph on August 31 your opinion state of preparedness cantonment to receive National Army recruits. If cantonment not ready for troops, give opinion as to when will be ready. Include statement as to whether or not hospital is ready to receive patients, also nearness of completeness of water supply, sewerage system, and arrangement for disposal of other wastes. In addition, report insanitary conditions, especially as to mosquito breeding, which can not be immediately corrected.

(*Telegram from the Surgeon General to camp sanitary officers, August 17, 1917.*)

Camp Medical Supply Depots.

See that medical supply officer your cantonment has sufficient assistance to organize his depot. Have regimental surgeons draw their equipment and prepare for examination of recruits. Supplies being shipped rapidly as possible.

(*Telegram from the Surgeon General to camp surgeons, August 18, 1917.*)

On Duties of Division Surgeons at National Army Cantonments.

1. The inclosed regulations, circulars, letters, memoranda, etc., are transmitted to the division surgeon for his information. Certain of them have been officially authorized; others are in the form of memoranda from this office intended as suggestions as to ways and means. Before laying out his campaign, the division surgeon should carefully digest these papers and adapt the ideas contained in them to his special problems.

2. In the absence of definite orders from the Chief of Staff of the Army regarding various matters pertaining to the administration of his department, he should be governed by Army Regulations, by the Manual for the Medical Department, by authorized circulars, etc., from this office, and by the suggestions contained in the inclosed communications, remembering always to keep in touch with the division chief of staff and the other departments in order that the work of the Medical Department may be coordinated with theirs.

3. The duties of the division surgeon, in the opinion of this office, may be broadly considered in their order of importance as follows:

(*a*) Prevention of the introduction and spread of communicable diseases in the cantonment area.

(*b*) Administration of prophylactic inoculations.

(*c*) Sanitation of the cantonment area.

(*d*) Physical examination of drafted men.

(*e*) Organization and equipment of sanitary units.

(*f*) Instruction and training of Medical Department personnel.

GENERAL CONSIDERATIONS.

4. Immediately upon arrival the division surgeon should report to the division commander for instructions.

5. The division surgeon should carefully study his prescribed duties as outlined in the Manual for the Medical Department, consulting the index upon these subjects. In addition, his duties are those prescribed for the senior surgeons of the concentration camp, as outlined in paragraph 599, M. M. D.

ORGANIZATION.

6. Tables of Organization, 1917, provide for a sanitary inspector and other medical officer as assistant to the division surgeon. They also authorize one sergeant first class, one sergeant, four privates first class, and three privates.

7. The division surgeon and the sanitary inspector of the division having been assigned, the division surgeon should promptly select the other personnel and so organize his office that the sanitary duty pertaining to the division may receive the necessary supervision.

8. He will consult with the division quartermaster relative to office space and equipment. Medical supplies of the division surgeon's office (par. 884, Manual for Medical Department) are being furnished without requisition.

9. Orders have been requested sending to the cantonment sufficient personnel to provide each regiment with 4 medical officers, 3 noncommissioned officers, and 14 enlisted men.

10. The division surgeon should supervise the organization of the various sanitary units. He should arrange with the division quartermaster for the formation and care of the sanitary trains.

EQUIPMENT.

11. The division surgeon will make sure that all individuals and organizations are equipped with such articles of Medical Department property as are required by existing orders, and that all individuals and organizations pertaining to the Medical Department are completely equipped.

12. He should see that the standard supplies and equipment pertaining to organizations be maintained intact for active service in combat. To this end additional supplies should be issued from the hospital for routine use, for sick call, and for the treatment of trivial cases at infirmaries. The compressed surgical dressing materials of the field supplies are very expensive and should be used only to equip pouches, belts, and chests. Articles of post supplies should be utilized wherever practicable. (See par. 601, M. M. D., and Supply Letter No. 17).

13. It is understood that at least 10 automobiles will be assigned to the quartermaster for routine use at the cantonment. In order to perform his duties efficiently, the sanitary inspector will require automobile transportation, and it is believed that sufficient automobiles have been allowed to enable this provision.

SUPPLIES.

14. The initial stock of the medical and veterinary supplies for a divisional supply depot are being furnished without requisition, and the medical supply officer has been designated. Blank forms of the Medical Department and a stock of combined typhoid and paratyphoid vaccine have also been ordered to the depot. The division surgeon should see that the medical supply officer of his cantonment has sufficient assistance to organize his depot. He will have regimental surgeons draw their equipment and be prepared to examine and care for recruits upon their arrival. Supplies for the cantonment medical supply depot are being shipped as rapidly as possible.

15. Attention is invited to the copy of a letter from the Surgeon General's Office upon the duties of the supply officer at the cantonment, sent to each medical supply officer, and also to Supply Letter No. 17, copies inclosed.

16. An initial stock is being sent to the divisional supply depot without requisition. Thereafter maintenance supplies will be kept up by requisition from the camp, supply depot, forwarded to the department surgeon for issue from the departmental depot. (See G. O. 96–E.)

17. The division surgeon may approve requisitions from organizations within his division for articles on the supply table. (See Supply Letter No. 17.)

18. Requisitions for articles not upon the supply table should be forwarded to the department surgeon for action. All requests should be scrutinized closely, to the end that issues may be economized as much as possible, compatible with the prompt and efficient service of organizations.

19. Owing to the great demand for supplies which will occur with the mobilization of the National Guard and the National Army and the difficulties which are being experienced in obtaining them, requisitions should be limited at first to the quantities necessary for one month.

20. Any undue delay in delivery of supplies should be promptly reported to the Surgeon General's Office, that the defect may be corrected and that the supplies may be issued from other depots.

21. An initial supply for the base hospital of 500 beds and essential equipment is being sent without requisition. Additional supplies should be requested as needed.

22. At the beginning it will be practicable to issue for the cantonment two portable dental outfits. These should be stationed at the base hospital. As soon as more adequate supplies become available they may be issued, the first one to a brigade and later one to each regiment, as may be deemed in your judgment most expedient. Requisitions for replenishment of dental supplies should be forwarded to the department surgeon.

23. Steps should be taken to secure from the divisional supply depot the blank forms, Division Surgeon's Emergency Supplies, paragraph 885, M. M. D.

SANITARY SERVICE.

24. The sanitary service of the cantonment is under the direction of the division surgeon. He should familiarize himself with the War Department sanitary order, and see that its provisions are carefully observed.

HOSPITALS.

25. The plan for the cantonment contemplates the provision of a base hospital of 1,000 beds and of a small infirmary for each regiment. The infirmaries will have from 6 to 10 beds to provide temporary care for patients until they can be sent to the base hospital. A sheet showing the allowance of medical supplies at the camp infirmary is inclosed herewith.

26. The medical supplies of a field hospital have been sent to the cantonment for use should it be necessary in case of emergency before the supplies for the base hospital arrive. This will afford sufficient material to enable resourceful surgeons to meet any ordinary emergency. It should be preserved as nearly intact as possible for issue to a field hospital organization later on as soon as it can be spared. It is essential that adequate, even if small, hospital accommodations should be provided to be available upon the arrival of the men, some of whom may need immediate attention.

PROTECTIVE INOCULATION.

27. The division surgeon will see that smallpox, typhoid, and paratyphoid vaccines are properly administered, and the proper notation made upon the vaccination register (Form 81, M. D.). Information should be furnished company and detachment commanders of the date and result of the last vaccination against smallpox and the date when the typhoid and paratyphoid vaccination was completed.

28. The department surgeon has been directed to have his departmental supply officer provide vaccine virus and sufficient vaccination registers (Form 81, M. D.).

29. It is especially enjoined that all men be thoroughly protected against smallpox. Every officer and man must be vaccinated upon entering into the service. If the first vaccination is ineffective, it will be repeated at the end of eight days.

CONTAGIOUS DISEASES.

30. The division surgeon must have the drafted men examined promptly upon arrival to ascertain their freedom from contagious diseases. Any such case found will be promptly isolated.

INSTRUCTION.

31. The division surgeon is responsible for the instruction of all individuals and organizations in personal and camp hygiene, and of the Medical Department personnel, commissioned and enlisted, in the routine work of the Medical Department in the field. An important factor in instruction will be the object lesson afforded by the administration of the camp and the measures inaugurated for the maintenance of sanitary conditions therein.

PHYSICAL EXAMINATION OF DRAFTED MEN.

32. A detailed scheme for the physical examination is inclosed (Memo. No. 3).

(*Cir. Memo. from the Surgeon General, August 22, 1917.*)

Reports of Sick and Wounded.

1. In order that an accurate record may be kept of the movement of the sick and wounded in organizations, especially as to communicable diseases, it is desired that you direct surgeons of regiments and other units to include pneumonia, paratyphoid, epidemic meningitis, measles, and scarlet fever in their daily consolidated field reports of patients on Form 84 (edition of June 15, 1917). Especial care should be taken to see that the number of absent sick is accurately shown. Frequent inspections will be made to verify the correctness of these reports.

2. Surgeons of regiments and other units of the division should keep in their offices consolidated field reports of patients to show by companies "number of patients" and "analysis of remaining cases." From this report the data for the consolidated report to the division surgeon will be taken.

3. The division surgeon should keep in his office a consolidated daily field report showing movement of sick by regiments.

4. The division surgeon should also keep a graphic chart showing by curves the daily rate per thousand of noneffectives in the division. Besides this chart, it may appear desirable to maintain other charts showing the amount of disability caused by the various communicable diseases in the division and in individual regiments and other units.

5. In addition, a daily telegraphic report to the Surgeon General will be made of the number of cases of pneumonia and epidemic meningitis in the division.

(*Cir. Letter from the Surgeon General, August 22, 1917.*)

Provision of Sanitary Personnel for Divisions of National Army.

1. It is contemplated that all medical officers for divisions of the National Army will be drawn from the medical officers' training camps. A considerable number has already been sent therefrom to each such division. Others will follow from time to time as their training in medical officers' training camps is completed.

2. The personnel for one ambulance company has been sent to each National Army division from a medical officers' training camp.

Three more are necessary. Of these, one will be organized from the personnel of the ambulance company recruited by the Red Cross, which will be sent direct to your division without previous training. This Red Cross company is organized as a motor company.

The remaining two ambulance companies will be organized within your division from officers and men drawn from the medical officers' training camps or from drafted men sent to the division and assigned to duty with the Medical Department.

3. The personnel for one field hospital has been sent to each National Army division from a medical officers' training camp.

The remaining three field hospitals are to be organized within the division from officers and men sent from the medical officers' training camps or from drafted men sent to the division and assigned to duty with the Medical Department.

4. Provision for the sanitary service with trains will be made by you within the division from the commissioned personnel already sent you and from the drafted men and other enlisted men of the Medical Department.

5. It is expected to supply some additional enlisted men to you from the medical officers' training camps, but you should plan to draw approximately 50 per cent of the enlisted sanitary personnel of your division from the drafted men assigned thereto.

6. It is expected to fully complete your full quota of medical officers by transfers from medical officers' training camps on or before October 15.

7. It is believed that you will have sufficient medical officers and enlisted men not only to meet current medical needs but to create, in skeleton form, the necessary new units and detachments quite as rapidly as they can be organized and equipped.

(*Cir. Letter from the Surgeon General, September 5, 1917.*)

Returns.

I am directed by the Surgeon General to invite your attention to the following extract from paragraph 1489, Army Regulations (C. A. R. 57, May 25, 1917), and to emphasize the importance of compliance therewith:

> Each department surgeon will transmit, not later than the 5th day of each month, to the Surgeon General a return of the officers of the Medical Corps and the Medical Reserve Corps, the contract

surgeons, the officers of the Dental Corps and the Dental Reserve Corps, the officers of the Veterinary Corps, the reserve veterinarians and the officers of the Veterinary Reserve Corps under assignment to or serving in the department during the preceding month. The chief surgeon of an Army corps will, in like manner, render a similar return of those who are not reported on the divisional and other returns made through him. The division surgeons of mobilized divisions and the surgeons of other units not divisional forming parts of an Army corps will in like manner render similar returns through the chief surgeon of the Army corps. The senior medical officer of a separate brigade or detachment of an Army corps, temporarily detached, will render a similar return through the same channel. The surgeon in charge of the medical base group of a line of communications will render a similar return through the chief surgeon of the Army corps or senior medical officer of a post, station, or separate command under the immediate direction of the War Department will, unless otherwise instructed, render a similar return directly to the Surgeon General.

Separate returns will be made in like manner of the medical, dental, and veterinary officers of the National Guard in the service of the United States and of such other troops as may be authorized.

When consolidated field returns of sanitary personnel are required by division or other commanders, medical officers are authorized to substitute an extract copy thereof for the returns called for in this paragraph.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Care in Preparation of Form No. 52, Sick and Wounded Report.

1. It is noted from the examination of the reports of sick and wounded in this office that a great many of the report cards, Form 52, are improperly made out, or that medical officers omit to make them out in some cases when required. As these cards are collected to furnish evidence in pension and war-risk claims, it is obvious that care should be exercised to see that they are properly prepared.

2. Attention is especially invited to paragraphs 428*d* and 450*c*, which require that a register and report card be made out for every officer and enlisted man with the command, whether on sick report or not, who is retired or who is discharged for disability.

3. It has come to the attention of this office, through The Adjutant General's Office, that a large number of men have been discharged from the service for whom the report cards, Form No. 52, have not been forwarded to this office.

4. Attention is also invited to paragraph 160, A. R., 1913, which requires a notification from the commanding officer to the surgeon, to be forwarded by him to the Surgeon General, upon the discharge for disability of any enlisted man in the military service. In a great many cases these letters of notification have not been received in this office. It is the duty of each surgeon to see that those letters are received and forwarded.

(*Cir. Letter, Surgeon General's Office, December 10, 1917.*)

Provision of Assistant to Sanitary Inspector.

1. Information is desired if you have within the division a medical officer having the aptitude and necessary qualifications for detail as an understudy to the sanitary inspector. If no officer is available for this purpose, report should be made to this office, attention Colonel Howard, and recommendation will then be made for the assignment of a medical officer from other camps or cantonments to be sent to your camp for that duty.

(*Cir. Letter from the Surgeon General, January 5, 1918.*)

Conduct of Sick Call.

1. It is imperative for sanitary reasons that a high grade of professional work be attained at sick call to the end that cases presenting mild, vague, or suspicious symptoms, frequently the precursors of serious infectious diseases, may be promptly removed from commands.

2. It is believed essential in large commands that one or more officers be detailed from selected members of the medical personnel for the purpose of standardizing the methods practiced at sick call. Proper recommendation for accomplishing this should be made to the division commander or other commanding officer.

3. When the sick call is large all available medical officers in the organization should be utilized in conducting it. The undoubtedly ill can thus be sent to the hospital with a minimum loss of time and the uncertain element can be given more extended study. In the training of medical officers, who are new to the service, and who are serving with raw levies, too much stress should not be placed on paragraph 206, Manual for the Medical Department, which prescribes that "sick call is not a suitable time for careful examination and treatment of the sick. Its purpose is to determine the number of men unfit for duty so that the morning report of sick may be promptly sent to the com-

manding officer." Where this is done a tendency to pass over incipient infections and to anticipate malingering may be fostered. It is believed that a malingerer can not be detected quickly. To hold under observation a man who is suspected of feigning illness is much better than to risk returning to duty a sick man, possibly one capable of transmitting disease. This matter is of importance not only to the individual soldier but also to the medical officer himself and to the command as a whole.

4. At sick call an examination sufficiently thorough to enable the examining surgeon to fully appreciate a man's physical condition should be insisted upon.

5. A record should be made at the infirmaries of the condition in which patients leave on transfer to hospitals, and this record should be sent to the hospital for the information and guidance of the receiving officer at the latter place.

6. The delay in segregating the seriously sick is not always due to faulty management of sick call. Men frequently do not report sick during the early stages of illness because of spartanlike qualities, ignorance, or antipathy. Some means of encouraging men to report earlier should be developed. Much may be accomplished in the way of cooperation on the part of enlisted men by means of informal talks of a few minutes' duration given by medical officers at some suitable time, as, for instance, before a drill or when the men are assembled at mess. One or more daily inspections should be made of the barracks at a time when they are supposedly empty for the sole purpose of detecting any men therein who are sick and have not reported to a medical officer. Company officers, who are familiar with the moods of their men, should be encouraged to be watchful for evidences of beginning ill health of men in their commands, and should be advised to send such men promptly to the regimental medical officers for treatment.

7. Special care should be taken by the admitting officers of hospitals to prevent those with infectious diseases from mingling with other patients who are awaiting admission. Regardless of the diagnosis sent by the regimental surgeon, the admitting officer should always be on the alert to avoid the assignment to general wards of the incipient cases of communicable diseases.

(*Cir. Memo. from the Surgeon General, February 19, 1918.*)

Management of Infirmaries.

1. The Surgeon General directs that division surgeons give their personal and careful attention to the very unsatisfactory condition which exists in regimental infirmaries in order that the large number of complaints regarding work being done therein may be eliminated.

2. Reports have reached this office which indicate that the treatment of wounds in infirmaries is intrusted to untrained enlisted men, and that frequent infections arise from improper treatment. It has been stated that medical officers on duty in these infirmaries are lax in their attendance and superficial and inaccurate in their methods of physical examination, and that in many cases their work violates every principle of scientific medicine and surgery. Many instances have been reported which indicate that medical officers view with suspicion men applying for treatment and for admission to hospitals.

3. The Surgeon General directs that at least one regimental surgeon shall be on duty at each infirmary at all hours, and that, if necessary, more than one officer be detailed. If the number of officers on duty in the division is under the number allowed by the Tables of Organization, you are directed to make application for assignment of the proper numbers.

4. Complaints regarding treatment received at regimental infirmaries are being referred for action to the Inspector General's Department.

(*Cir. Letter from the Surgeon General, February 25, 1918.*).

Organization of Camp Surgeon's Office.

1. Attention is invited to the necessity, on departure of a division, of leaving behind at the camp an organized camp surgeon's office, with both commissioned and enlisted personnel commensurate with the probable immediate needs of the command. It is the intention of this office to assign camp surgeons to all camps, but in the event that this is not accomplished before the division leaves camp, the division surgeon should take steps to select the necessary personnel from the officers and enlisted men who are to remain behind and to instruct them in their duties. If such personnel is not available at the camp, this office should be promptly notified by telegraph and request made for needed personnel.

2. It is of the highest importance that a complete file of originals (or copies) of all orders, letters, and instructions which pertain to the camp should be left behind. Experience has shown that some

division surgeons on departure have taken every record of every kind which pertained to the medical administration of both camp and division.

3. You will notify this office by telegraph of action taken at least two weeks before contemplated departure of your division headquarters.

(*Letter from the Surgeon General to division surgeons, May 21, 1918.*)

Scheme for Organization of Medical Department Activities.

1. The attached scheme for the organization of Medical Department activities at a large camp is furnished for your information. This plan received the highest commendation from the commanding general of the camp in question and appears to cover in an exceptionally complete manner the various functions of the Medical Department. It is not intended that this plan should necessarily be adopted as a standard, but it is desired that you give it careful study with a view to correcting any defects which you may find in your camp organization.

HEADQUARTERS CAMP BLANK,
OFFICE OF THE CAMP SURGEON,
May 10, 1918.

From: The camp surgeon.
To: The Adjutant General of the Army, Washington, D. C. (through the commanding general, Camp Blank).
Subject: Organization of the medical department of a camp.

1. The various activities of the Medical Department at a large receiving camp, such as Camp Blank, have been left, as far as the tables of organization are concerned, to each camp surgeon to work out as he sees fit.

2. A camp, such as Blank, is permanent in its character, and it is suggested that a medical officer of at least the rank of colonel be assigned permanently as camp surgeon to coordinate the work of the different divisions and the depot brigade. He should have a permanent staff, both commissioned and enlisted, and the sanitation of the entire camp should be directly under his supervision.

3. The organization of the medical department of the division is fully covered by the Tables of Organization.

4. The depot brigade is a permanent organization and its activities are so varied that it is believed that a complete and coordinated medical organization should be prescribed. This should be permanent, and should be sufficiently elastic to meet the many emergencies which may arise in the brigade.

5. As at present organized in this camp, the medical activities consist of seven different services and embody seven special boards, as follows:

(*a*) Services:
    (1) Examination of recruits.
    (2) Remedial defects.
    (3) Venereal.
    (4) Detention camp.
    (5) Quarantine camp.
    (6) Infirmaries.
    (7) Dental.
(*b*) Special boards:
    (1) Tubercular.
    (2) Neuropsychiatric.
    (3) Eye and ear.
    (4) Orthopedic.
    (6) Genitourinary.
    (7) Psychological.

6. The examination service has assigned to it nine commissioned officers, and during the periods when men are being received the special boards work in conjunction with this service.

7. The remedial defects service has five commissioned officers assigned to it, whose duties are to prescribe drill and exercise to develop defectives, supervise their work, and make recommendations as to the suitable final disposition of these men. The special boards also act as consultants for the various classes of defects coming under their specialities.

8. There are six to eight officers assigned to the detention camp, who act as camp surgeons, complete inoculations and vaccinations, and complete the medical records of the men. While in this camp, an orthopedic survey is made of the men, and corrective drill is instituted where necessary.

9. At the quarantine camp six officers are assigned, who act as camp surgeons, treat meningitis carriers, diphtheria carriers, and perform the various duties necessary to the health of the various contacts.

10. The venereal service has three officers assigned to it. This service treats all cases of syphilis and supervises the treatment of all cases of gonorrhea in camp. The service keeps the necessary records. This service is very important, as is evidenced by the fact that from 3 to 5 per cent of all drafted men have venereal disease when received.

11. The infirmary service comprises the battalion medical service, two officers being assigned each training battalion (Tables of Organization). This personnel may be cut considerably if this proposed organization is adopted, three battalions being served at one infirmary and three medical officers assigned to each infirmary.

12. The dental service has 11 dental surgeons assigned, with a completely equipped dental infirmary.

13. The various boards examine men when received and act as consultants in their specialties.

14. It has been found that this organization fulfills all the requirements of the depot brigade and is able to handle the work in an efficient manner. It is therefore recommended that the following Medical Department organizations be prescribed for National Army camps:

1 colonel, camp surgeon.
1 major, assistant to camp surgeon.
1 captain, assistant to camp surgeon.
1 major, sanitary inspector.
8 captains or first lieutenants, assistants to sanitary inspector.
1 lieutenant colonel, surgeon, depot brigade.
1 captain, assistant to surgeon.

Examination Service.

1 major.
8 captains or first lieutenants.

Remedial Defects Battalion.

1 major.
4 captains or first lieutenants.

Venereal Service.

1 major.
2 captains or first lieutenants.

Detention Camp Service.

1 major.
5 to 7 captains or first lieutenants.

Infirmaries.

1 captain or first lieutenant to each training battalion.

Dental Service.

1 major.
10 captains or first lieutenants.

Special Boards.

TUBERCULAR.

1 major.
4 captains or first lieutenants.

CARDIOVASCULAR.

1 major.
2 captains or first lieutenants.

NEUROPSYCHIATRIC.

1 major.
4 captains or first lieutenants.

EYE AND EAR.

2 captains.

ORTHOPEDIC.

1 major.
2 captains or first lieutenants.

PSYCHOLOGICAL.

2 captains or first lieutenants.

15. This organization calls for 73 to 82 medical officers, according to the number of battalions; 11 dental and 2 Sanitary Corps officers.

16. It may be somewhat reduced by using heads of various services as presidents of the special boards. This, however, is not advisable, as there is an abundance of work for the entire cadre.

17. Unless some action is taken toward a proper camp organization with permanent personnel, when the Blank division leaves for overseas duty this camp will be without a personnel to per-

form the functions of the camp surgeon's office and the organization of the depot brigade will be impaired, as there will not remain sufficient trained personnel to do the work.

18. This is especially important in this camp where the sanitary conditions always demand most careful supervision, and also on account of the vast amount of work necessary in receiving the large number of men expected during the coming month.

(*Memo. from the Surgeon General to camp surgeons, May 27, 1918.*)

Consolidated Strength Report.

1. The following from The Adjutant General of the Army, under date of June 12, 1918, is quoted for your information and guidance:

> The Secretary of War directs that each commander of a division, camp, depot brigade, and separate unit not included within a division, camp, or separate brigade in the United States submit by telegram to this office on the 15th and last day of each month, and not later than 4 o'clock p. m., the following consolidated report of his command:
>
> (*a*) Number and designation of organization reporting.
>
> (*b*) Total number of officers and total number of men of the division, camp, separate brigade, or separate unit in this country on the date specified.
>
> (*c*) The number of men in the division, camp, depot brigade, or separate unit who have had less than one month's military service.
>
> (*d*) The number of men in the division, camp, depot brigade, or separate unit who have had more than one month's and less than three months' military service.
>
> (*e*) The number of men in the division, depot brigade, camp, or separate unit who have had more than three months' military service.
>
> Reports will not be duplicated. Reports of division and depot brigades will not be included in camp reports. Information contained in telegraph reports will be placed in column H on semimonthly strength reports of camps, divisions, and depot brigades. In case part of a division is not stationed at same camp as division headquarters, division commander will direct each detached part of division to make report directly to this office to be consolidated with division reports upon receipt in War Department. Any previous instructions on this subject are revoked. Copies form for telegraphic report mailed to-day.

2. There is inclosed herewith a suggested form for telegraphic reports as directed above. These reports will be submitted directly to The Adjutant General of the Army on the 15th and last day of each month. Each camp or station commander will report for all units of his camp or station.

SUGGESTED FORM FOR TELEGRAPHIC REPORTS ON PERSONNEL TRAINING.

Code:
A—Name and number of unit reporting.
B—Total strength; officers and enlisted men reported separately.
C—Men in military service less than one month.
D—Men in military service more than one but less than three months.
E—Men in military service three months or more.

Directions:
Follow form as given.
Where more than one unit is reported upon, give separate section to each.
Place explanatory remarks directly after section to which they refer.

[Telegraphic form.]

Fort Sam Houston, Texas.

A Thirty-ninth Ambulance Company comma B six officers one hundred nine men comma C zero comma D ninety-three comma E sixteen period A Tenth Ambulance Company horsedrawn comma B seven officers one hundred sixty-two men comma C four comma D seventy-eight comma E eighty period Quartermaster attached unit not included period

Williams commanding.

(*Cir. Letter from the Surgeon General, June 17, 1918.*)

Communications Forwarded to Camps, Instructions Concerning.

All communications intended for personnel or organizations on duty at or under the jurisdiction of a division commander at cantonments (either National Guard, National Army, or Regular Army), which heretofore have been sent through the division surgeon, will in the future be forwarded through the camp surgeon when it is doubtful that the division surgeon is still on duty at the divisional cantonment. In quite a few instances where the division has departed for overseas service, communications addressed through the division surgeon, rather than the camp surgeon, have followed the division overseas, resulting in considerable delay and confusion because of the lateness of the reply.

(*Office Memo. No. 49, Surgeon General's Office, June 25, 1918.*)

Consolidated Strength Report.

1. Relative letter from this office under date of June 17, 1918, quoting instructions from The Adjutant General of the Army, dated June 12, 1918, concerning consolidated strength report to be submitted directly to The Adjutant General of the Army on the 15th and last day of each month, you will telegraph this report in plain text, not in code, in accordance with instructions received in this office from The Adjutant General under date of July 16, 1918.

(*Cir. Letter from the Surgeon General, July 18, 1918.*)

Personnel and Equipment to Accompany Troops En Route.

1. In reply to your letter of August 2, with reference to Medical Department personnel and equipment which should accompany troops from your station to port of embarkation, you are informed that as a general rule one medical officer, one noncommissioned officer, and one private first class should accompany each trainload of 500 replacement troops.

2. The medical and surgical chest or its near equivalent in expendable supplies should be provided for use en route. Litters are not considered necessary.

3. If nonexpendable property is sent it should be issued to the accompanying medical officer on memorandum receipt, and should be returned to your camp as baggage of medical personnel or by express. It should not be invoiced to the surgeon, port of embarkation.

4. As medical officers sent with replacement troops from your station are ordered to return to proper station upon completion of their duty with troops, the return of nonexpendable medical property as indicated above should be easily accomplished.

(*Cir. Letter from the Surgeon General, August 18, 1918.*)

Monthly Report of Physical Examination Made Prior to Separation from Military Service.

1. It is desired that the "Monthly report of physical examination made prior to separation from the military service other than by certificate of discharge for disability" be amended by the inclusion as paragraph 1A of said report of the following data:

1A.

	Number.		
	White.	Colored.	Total.
Officers claiming a defect or disability			
Officers, claiming a defect or disability but none found by the examining board			
Enlisted men claiming a defect or disability			
Enlisted men claiming a defect or disability but none found by the examining board			
Grand total			

(*Memo., Surgeon General's Office, December 6, 1918.*)

Information on Camp Personnel.

1. This office desires to know approximately the source of the troops occupying your camp since March, 1918.

2. For purposes of uniformity you are asked to supply the information in the tabular form, an illustration of which appears below:

Month.	Average strength.	Per cent distribution of camp personnel, by State (to nearest 10 per cent).	Per cent of colored troops of total strength and source.
April	25,000	Iowa, 10 per cent; Georgia, 60 per cent; Virginia, 10 per cent; Florida, 20 per cent.	3 per cent, South Carolina.
May	20,000	do	Do.
June	18,000	do	Do.
July	10,000	do	Do.
August	16,000	Iowa, 5 per cent; Georgia, Florida, and Virginia, 20 per cent; Minnesota and South Dakota, 75 per cent.	5 per cent, South Carolina and Mississippi.
September	35,000	do	Do.
October	36,000	do	Do.
November	36,000	do	Do.
December	37,000	do	Do.

NOTE.—Practically all Georgia and Florida troops left camp before August 1.

3. Any notations regarding unusual influxes or departures of any group of men will also be welcomed.

(*Cir. Letter No. 14, Surgeon General's Office, January 8, 1919.*)

Computation of Strength of Command for Weekly Telegraphic Report.

1. In computing strength of command for the weekly telegraphic sick report, all officers and enlisted men at the hospital will be included.

2. This will be done by adding the mean strength of the medical personnel on duty at the hospital to the average number of patients in the hospital for the week, the result to be placed in line A, Form 86, Medical Department.

(*Cir. Letter No. 17, Surgeon General's Office, January 8, 1919.*)

Monthly Report on Demobilization.

1. The monthly report on all cases of physical examination prior to separation from the service, as required by Surgeon General's letter November 21, 1918, will hereafter contain the information indicated on the attached form:

Monthly report of physical examination made prior to separation from the military service other than by certificate of discharge for disability at ——————, *month ending* ——————, *19—.*

——————————
(Place and date.)

SECTION I.

	Number.		
	White.	Colored.	Total.
Officers examined			
Enlisted men			
Grand total			

SECTION II.

	Number.		
	White.	Colored.	Total.
Without disability (including Sec. III*a*):			
Officers			
Enlisted men			
Grand total			

SECTION III.

	Number.		
	White.	Colored.	Total.
a) Claiming disability but not confirmed by medical examination:			
Officers			
Enlisted men			
(*b*) Claiming disability confirmed by medical examination:			
Officers			
Enlisted men			
(*c*) Not claiming disability, but disability found by medica lexamination:			
Officers			
Enlisted men			
Grand total discharged with disability (total of (*b*) and (*c*))			

SECTION IV.

	Number.		
	White.	Colored.	Total.
(*a*) Held temporarily on account of contagion or other acute conditions as follows:			
Active gonorrhea			
Active syphilis			
Chancroids			
Body vermin			
Communicable skin disease			
Exanthemata			
Active tuberculosis			
Insanity			
Other conditions			
Total			
(*b*) Held for maximum degree of improvement as per Cir. 188, W. D., 1918			
(*c*) Held for other causes			
Grand total			

NOTE.—Grand totals of Sections II, III, and IV added together should equal grand total of Section I.

SECTION V.

Classification of cases, with disability, as per paragraphs (*b*) and (*c*), Section III.	Classification at time of entrance into the service.		
	Full service.	Limited service.	Total.
Ophthalmological:			
Astigmatism			
Myopia			
Hyperopia			
Other errors of refraction			
Trachoma			
Other conditions			
Otolaryngological:			
Otitis media			
Defective hearing			
Other conditions			
Cardiovascular:			
Functional cardiac disorder			
Valvular heart disease			
Disease of arteries			
Other conditions			
Neuropsychiatric:			
Epilepsy			
Exophthalmic goiter			
Mental deficiency			
Other conditions			
Tuberculosis:			
Pulmonary			
Other conditions			
Orthopedic:			
Pes planus			
Other conditions			
General surgical and skin:			
Hemorrhoids			
Hernia			
Varicose veins			
Skin diseases			
Other conditions			
Venereal:			
Syphilis			
Gonorrhea			
Chancroid			
Miscellaneous causes			
Total			

SECTION VI.

Names and efficiency of chief medical examiner and of each of his principal assistants.

SECTION VII.

(*a*) Nominal list of examiners on duty the last day of the month, giving surname, Christian name, and rank ("S" to be placed before name of assigned to station or camp as specialist).
(*b*) Relieved during the month.

SECTION VIII.

Number examined each day:

Day of month.	Number examined.	Day of month.	Number examined.
1		18	
2		19	
3		20	
4		21	
5		22	
6		23	
7		24	
8		25	
9		26	
10		27	
11		28	
12		29	
13		30	
14		31	
15			
16		Total	
17			

Remarks:..

....

....

....
.... *Medical Corps,*
Camp or Post Surgeon.

(*Cir. Letter No. 114, Surgeon General's Office, March 4, 1919.*)

Report on Cases Discharged on Certificate of Disability.

1. The camp, post, or other senior surgeon of a command will render monthly a report on the number of men recommended for discharge on surgeon's certificate of disability during the month (Form 17, A. G. O.). This report, in duplicate, will be mailed not later than the 10th of the following month to the Surgeon General, attention Division of Sanitation. The report will contain the information indicated in the attached form of report and may in addition transmit, as exhibits, any other data which the camp surgeon may desire to submit.

Monthly report on men recommended for discharge on surgeon's certificate of disability at .... , in compliance with Circular Letter No. —, Surgeon General's Office, February 20, 1919, for the month ending ...., 1919.

....
(Place and date.)

I.

(*a*) Number examined by C. D. D. boards.
(*b*) Number recommended for discharge.
(*c*) Number of same actually discharged during the month.

II.

Classification of disabilities of those actually discharged during month.	Classification at time of entrance into the service.		
	Full service.	Limited service.	Total.
Ophthalmological:			
Astigmatism			
Myopia			
Hyperopia			
Other errors of refraction			
Trachoma			
Other conditions			
Otolaryngological:			
Otitis media			
Defective hearing			
Other conditions			
Cardiovascular:			
Valvular heart disease			
Disease of arteries			
Other conditions			
Neuropsychiatric:			
Epilepsy			
Exophthalmic goiter			
Mental deficiency			
Other conditions			
Tuberculosis:			
Pulmonary			
Other types			
Orthopedic:			
Pes planus			
Other conditions			
General surgical and skin:			
Hemorrhoids			
Hernia			
Varicose veins			
Skin diseases			
Other conditions			
Venereal:			
Syphilis			
Gonorrhea			
Chancroid			
Miscellaneous causes			
Total			

III.

(*a*) Number of boards maintained (including camp or base hospital).
(*b*) Personnel and efficiency of board or boards.

....

....................., *Medical Corps,*
Camp or Post Surgeon.

(*Cir. Letter No. 115, Surgeon General's Office, March 4, 1919.*)

Letter of Commendation, Medical Officers.

1. It has come to the attention of the Surgeon General that the letters of commendation furnished officers of the Medical Department upon their discharge from the service have at a number of camps been issued in multigraphed form. In the opinion of the department, a multigraphed letter does not carry out the spirit or intentions of the Surgeon General as expressed in the department's circular letter of December 5, 1918.

2. The Surgeon General directs that in the future all letters of commendation issued under the provisions of the above circular letter be typewritten in each case and signed by the senior representative of the Surgeon General present.

(*Cir. Letter No. 130, Surgeon General's Office, March 8, 1919.*)

Weekly Telegraphic Reports of Sick.

1. Recent telegraphic reports of sick indicate that admissions are being duplicated at some stations by taking up as original "admissions" cases received "by transfer" from other stations as well as those taken sick from the command during the week. This practice has resulted in giving unusually high admission rates at certain stations where it is known that the actual disease prevalence is extremely low.

2. It is directed that in future telegraphic reports of sick, on line C, "Admitted this week," report (1) the admissions from the command, setting forth the number admitted to hospital and to quarters, for injuries and for the different diseases enumerated, including influenza; (2) like information will be furnished in regard to cases admitted by transfer from other stations.

3. Other lines of Form 86, Medical Department, will be reported as at present.

(*Cir. Letter No. 212, Surgeon General's Office, May 16, 1919.*)

Weekly Report of Sick Among Colored Troops.

1. In addition to the weekly telegraphic report of sick as now rendered from your camp, a report on Form 86, Medical Department, for colored troops only, will be mailed to this office Saturday morning of each week. This report will cover the same period as the weekly telegraphic report.

2. The weekly telegraphic report of sick as now rendered will continue to show the command as a whole, irrespective of race.

(*Cir. Letter from the Surgeon General, July 22, 1918.*)

Additional Information to be Included in Weekly Telegraphic Report of Sick.

1. In renderng the weeky telegraphic report of sick on Friday night of each week it is desired that you include the number of vacant beds in hospital, number of medical officers, female nurses, and enlisted men, Medical Deparment, on duty at your station on Friday night also.

2. Circular Letter No. 201, this office, May 6, 1919, which directs a telegraphic report of medical officers be made on Saturday morning, is rescinded.

3. The daily telegraphic report of new cases of pneumonia, meningitis, influenza, and deaths will be discontinued.

4. A weekly telegraphic report of sick containing the additional information requested in paragraph 1 would read as follows:

A twenty-three two sixty-four B hospital four sixty-two quarters one twenty-nine injuries sixty-nine pneumonia nine malaria eight venereal one forty-eight measles one fourteen meningitis two others two forty one C hospital two forty seven quarters one eight six injuries eighty six pneumonia seven malaria nine venereal one sixty two measles one nineteen meningitis one others forty-nine died pneumonia one carcinoma of liver one F eight G five seventy eight H hospital two ninety four quarters one forty-two injuries eighty seven pneumonia eight malaria nine venereal one sixty-eight measles one twenty four meningitis two others thirty-eight vacant beds sixty-seven medical officers one fifteen nurses sixty-two enlisted three twenty-six.

(If line B has been sent on previous telegram it will not be necessary to report.)

(*Cir. Letter No. 267, Surgeon General s Office, July 23, 1919.*)

Law Enforcement in Communities Adjacent to Military Camps, Posts, or Stations.

1. The following extracts from a communication from the Director, Commission on Training Camp Activities, relative to law enforcement in combating venereal diseases is published for the information of all concerned:

> 1. Pursuant to verbal request of August 15, relative to law enforcement in communities adjacent to Army camps and posts for the purpose of combating venereal diseases, the following information is conveyed.
>
> 2. The law-enforcement division of the Commission on Training Camp Activities is now designated as the legal advisory division.
>
> 3. All fixed post law-enforcement officers have been withdrawn from the field and several of the more experienced are retained on duty in Washington as legal advisors.
>
> 4. In accordance with the policy outlined by the Secretary of War, these officers will be available for special duty along law-enforcement lines in the field upon the request of commanding officers.

2. Instances coming to the knowledge of the surgeon of a military camp, post, or station seeming to require the services of law-enforcement officers will be brought to the attention of the commanding officer for reference to the Commission on Training Camp Activities should he deem it advisable.

(*Cir. Letter No. 290, Surgeon General's Office, August 26, 1919.*)

Weekly Telegraphic Reports of Sick.

1. Circular letter this office, March 14, 1918, which directs that distinction be made between cases of venereal diseases contracted prior to arrival at station and those contracted after joining station is revoked.

2. In future telegraphic reports of sick to this office but one number in regard to venereal disease will be sent. The figure sent will indicate the number of new cases of veneral diseases detected during the week as defined in Circular Letter No. 293, 1919, S. G. O.

(*Cir. Letter No. 307, Surgeon General's Office, September 26, 1919.*)

Weekly Telegraphic Report of Sick.

1. In preparing Form 86, Medical Department, and the weekly telegraphic report of sick, include diphtheria after dysentery in the list of diseases enumerated.

(*Cir. Letter No. 348, Surgeon General's Office, November 17, 1919.*)

Additional Information to be Included in Weekly Telegraphic Report of Sick.

1. In reporting the number of enlisted men, Medical Department, assigned to duty at your station in the weekly telegraphic report of sick, as required by Circular Letter No. 267, Surgeon General's Office, July 23, 1919, distinction will be made between men enlisted or drafted for the emergency and those enlisted for the Regular Army. Those enlisted or drafted for the emergency will be reported as "Emergency" and those enlisted for the Regular Army will be reported as "Regulars."

2. In reporting 89 enlisted men, Medical Department, 38 of whom had enlisted for the Regular Army, the telegram would read as follows:

> A twenty-three two sixty-four B hospital four sixty-two quarters one twenty-nine injuries sixty-nine pneumonia nine malaria eight veneral one twenty-eight measles one fourteen meningitis two others two sixty-one C hospital two forty seven quarters one eighty-six injuries eighty-six pneumonia seven malaria nine venereal one sixty-two measles one nineteen meningitis one others forty-nine died pneumonia one carcinoma of liver one F eight G five seventy-eight H hospital two ninety-four quarters one forty-two injuries eighty-seven pneumonia eight malaria nine venereal one sixty-eight measles one twenty-four meningitis two others thirty-eight vacant beds sixty-seven medical officers one fifteen nurses sixty-two enlisted emergency fifty one regulars thirty-eight.

(*Cir. Letter No. 346, Surgeon General's Office, November 12, 1919.*)

INSTRUCTIONS FOR THE PHYSICAL EXAMINATION OF DRAFTED MEN AT NATIONAL ARMY CANTONMENTS.

[The following circulars and memoranda were assembled and published in pamphlet form by the Surgeon General, August 25, 1917, for the convenience of medical examiners. They were superseded in whole by Standards of Physical Examination Governing the Entrance to All Branches of the Armies of the United States, prepared under the direction of the Surgeon General of the Army, and issued through the office of the Provost Marshal General, June 5, 1918. On the same date, Special Regulations No. 65, duplicating the instructions issued through the office of the Provost Marshal General, were promulgated. These Special Regulations No. 65, revised and reissued November 8, 1918, will be found on page 730.]

The Physical Examination of Drafted Men at National Army Cantonments.

1. The original physical examination of men drafted under the selective service act of May 18, 1917, is made by local boards on Form No. 14, Provost Marshal General's office (copy inclosed), and the original form is forwarded with the man to the mobilization (cantonment) camp. (See Note 1.)

2. The reexamination of drafted men provided in section 17, Mobilization Regulations (Form 31), should be made under the direction of the division surgeon with the least practicable delay after their arrival at the cantonment, as follows: (*a*) The preliminary examination; (*b*) the final examination.

3. The preliminary examination should be conducted at regimental infirmaries (if practicable) by regimental medical officers, and such other medical examiners as may be detailed by proper authority. (See Note 2.) As a result of this examination medical officers are authorized to accept for service all men who are mentally and physically qualified. All cases recommended for rejection and doubtful cases of every sort will be reported by name to the division surgeon for further examination.

4. *The final examination.*—At each cantonment specialists have been detailed to conduct the final examinations, as follows: Examiners for visual defects and diseases of the eye; for defects of hearing and diseases of the ear, nose, and throat; for diseases of the lungs; for diseases of the heart and vascular system; for mental and nervous diseases; for diseases of the bones and joints, including the feet; for dental defects; and for general disqualifying conditions not covered by these specialties.

5. Drafted men whose physical condition has been reported to the division surgeon as in doubt, or deserving of discharge, at the preliminary examination will be referred to the medical

examiner of the specialty concerned. The special examiner will make such tests and examinations as he may deem necessary. In all cases where there is agreement between the specialist and the regimental surgeon the latter should accept or reject, as the case may be; in case of disagreement the matter should be referred to the division surgeon.

NOTE 1.—The latest information (August 25, 1917), as to the probable dates of arrival of drafted men at cantonments is as follows: One per cent of the total quota on September 5, 6, 7, 8, and 9 (5 per cent in all); 40 per cent beginning September 19; 40 per cent beginning October 3; and the remaining 15 per cent as soon thereafter as practicable.

NOTE 2.—A scheme is suggested (p. 4) for making physical examination of men in large numbers; it has been found to work well and should be used if practicable. The division surgeon should detail at least one noncommissioned officer and eight enlisted men of the Medical Department for this duty for each regiment. A retained record will be made on the examination card (Form 88); a sufficient supply has been sent to the division supply officer. The physical standards for this examination are contained in Form No. 11, provost marshal general's office (copy inclosed), and in special memoranda and circulars inclosed.

6. In addition to the corps of special examiners, the division surgeon may appoint from the cantonment personnel such additional medical examiners as may, on account of special training, be particularly competent to determine the qualifications of recruits. These examiners will pass upon general disqualifying conditions not covered by the other specialists.

METHOD OF EXAMINATION.

7. The regimental surgeon should request the regimental commander to furnish daily at 7 p. m. a list of the names in full of the men to be examined the following day, together with physical forms (No. 14, P. M. G. O.) in each case. The surgeon will have a recruit examining card (Form 88, M. D., 1917) made for each drafted man from this list, numbering each card numerically, beginning with 1. This will be done the night before the examination.

8. On the morning of the examination company commanders will have the men report at 6.30 at the regimental infirmary and turned over to a sergeant of the Medical Department designated to receive them. A roll call is made by this sergeant, who should have in his possession the recruit examination cards. Each man is now given his card and proceeds to the room for examination of eyes. This is done by two enlisted men of the Medical Department in the presence of a medical officer; the vision of each eye should be tested separately at a distance of 20 feet and the result recorded on the recruit card in the proper place. The recruit is now faced about and his hearing tested at 20 feet by a low conversational voice, testing one ear at a time, the other being closed by pressure on the tragus. The nose, throat, and ears are now examined by reflected light. Any deviation from normal is recorded on recruit card. If the man is found disqualified for any cause, the facts are plainly stated on the card and the case referred to the specialist.

9. Having completed this portion of the examination the men are taken in lots of 30 and in numerical order to the main examining room. Nos. 1 to 15 are lined up on one side, 16 to 30 on the other. They strip and face the examiner, who has a clerk seated near him with the recruit cards of the men to be examined. All the men on one side of the room hop in a circle first on one foot, then on the other, keeping well up on the toes to determine strength of feet. The same procedure is repeated on the other side. Note any weakness and, if necessary, refer to specialist.

10. Upon completion of hopping test, have them line up again and proceed with the general examination as follows: Have each man face the examiner, scrutinize him carefully, taking into consideration his general physique and intellectual appearance. If not muscular, well proportioned, and healthy looking, refer to the specialist to have weight, height, and chest measurements taken for a final decision. Exercise all joints, at the same time asking such questions as may aid in forming an opinion as to his mentality. Begin at top of head, passing hands through hair to detect abnormalities, depressed fractures, adherent scars, etc. Next, examine the eyes, pulling down lower lids and inverting upper ones. Open the mouth and carefully scrutinize teeth; look for mucous patches; protrude tongue to note tremor; make Romberg test. Pass hand over front and back of neck, examining for goiter and enlarged glands. Observe clavicle and ribs for any enlargements. Note conformation of chest. Examine heart and lungs with stethoscope. Pass hand over edges of liver, spleen, and gall bladder. Note any abnormal scars and test for ventral hernia. Have applicant stand on toes and cough at same time. Place your finger in inguinal rings and test for hernia. Have the man pull back the foreskin of his penis and observe for ulcers, then strip forward to detect gonorrhea; examine scrotum; observe extremities for atrophy, varicosities, shortening ulcers, or adherent scars, especially over shins, edema or thickening of periosteum. Examine feet carefully and note defects.

11. Face applicant about; begin at top of head and proceed down in similar manner. Look for atrophy of subscapular muscles, marked winged scapulæ, curvature of spine, Potts' disease, ankylosis of spine. Have applicant bend over and pull buttocks apart; look for hemorrhoids, fistula, condylomata, etc. Observe lower extremities for varicosities, atrophy, etc. Have applicant hold up first one foot and then the other; look for corns, callosities, also note the outline of the dust on the bearing surface of the foot. During the entire examination ask such questions as may aid you in determining the fitness of the applicant. Bear in mind that you are examining drafted men and do not be influenced by subjective symptoms where there are not objective signs to bear out the statements. This completes the physical examination.

12. After the preliminary examination and before the man dresses, he should receive his first dose of triple vaccine and the smallpox vaccination. The site of the inoculation should be just above right posterior axillary fold; this area should be painted with iodine solution prior to inoculation. The insertion of left deltoid should be the site of the smallpox vaccination, which should be well cleansed with soap and water and wiped dry with alcohol. It will require two enlisted men to do this work. The fact of vaccination and inoculation should be noted on recruit examining card at the time. All men, whether accepted or rejected, should receive the vaccination and inoculation.

13. All cases recommended for rejection at the preliminary examination and all doubtful cases must be referred to a specialist. The recruit examining card will show for what cause the man is referred and the specialist will note his findings and action thereon.

14. The cases to be referred to the specialists, together with their recruit examining cards, are now sent to the place for special examination.

15. The regimental surgeon should furnish to the regimental commander daily a list of the men accepted and a list of those recommended for discharge. Notes on the recruit examining card should be transcribed on the physical forms. Weight, height, and chest measurements will be copied from data on physical forms (No. 14, P. M. G. O.) furnished by the local boards, except in those cases referred to the specialist for retaking of weight, height, and chest measurements, in which case the specialist will note his findings in the proper place on the recruit card.

16. The recruit examination card should be retained by the regimental surgeon until all immunizations are completed and noted. It should then be sent to the division surgeon for file.

17. The identification record (Form No. 260, A. G. O.) will be made in accordance with existing regulations. The necessary equipment will be found in the emergency recruiting outfit (par. 952, M. M. D.). These have been supplied to National Army cantonments at the rate of one to each 2,000 men.

(*Memo. No. 3, Office of the Surgeon General, August 22, 1917.*)

The Visual Examination of Drafted Men at National Army Cantonments.

1. For visual requirements see Form 11, P. M. G. O., paragraph 2, (*i*) and (*j*).

2. For method of testing vision see Form 11, P. M. G. O., paragraph 2*i*. The test card must be well lighted.

3. In testing vision, when doubt exists as to the ability of the individual to read the test letters, he will be referred to the special examiner for malingering tests.

4. The lids of every individual selected by the draft will be turned for the purpose of determining the presence of trachoma. All suspicious cases will be referred to the special examiner.

TESTS FOR THE DETECTION OF MALINGERERS.

5. Malingerers who wish to evade military service may be divided into two classes, as follows:

(A) Those who claim total loss of vision in one eye.

(B) Those who claim partial loss of vision in one or both eyes.

Either group may have a normal acuity of vision or may exaggerate a defect actually present.

6. In testing for malingering the medical examiner should bear in mind that detection is more likely to result when the man is allowed to believe that his case is regarded from the first to be genuine and that his story is not discredited. There is something indefinable in the bearing of the malingerer which experience alone can detect. He may be self-assertive and overconfident; he may be hesitating or evasive. Careful observation should be made of his conduct and every movement noted. The nature of the man's answer should be taken into account and considered in the light of the kind of reply that is given when a genuine refraction case is being dealt with.

EQUIPMENT.

7. The following equipment will be supplied:

(*a*) Trial frame; 1 blank; spherical lenses, +16, +3, +0.25, −3, −2, −1, −0.25 (to be found in regular Medical Corps equipment).

(*b*) Two prisms, one 6°, one 10° (in regular equipment).

(*c*) Ophthalmoscope, electric (battery in handle).

(*d*) Condensing lens.

(*e*) Loupe.

(*f*) Red and green letters on glass: (*a*) Letters varying in size; (*b*) spectacle frame containing red and green glasses.

(*g*) Special test cards, one a duplicate, with letters reversed to use with a mirror.

(*h*) Mirror large enough to reflect test card.

(*i*) One stereoscope with special cards.

(*j*) Retinoscope (electric, with battery in handle).

(*k*) Ruler, about 1¼ inches wide.

METHODS OF EXAMINATION.

8. *Class A.—total loss of vision in one eye.*—(*a*) A 6° prism, base downward, is placed before the admittedly sound eye, while the man looks at a distant light or candle; if he sees two candles, binocular vision is proved. The examiner may vary the test by placing the prism before the "blind" eye, either base up or base down.

(*b*) A prism of 10° with base outward is placed before the "blind" eye. If there is any sight in this eye, double vision will be produced and the eye will be seen to move inward to correct it and fuse the two images.

(*c*) The alleged "blind" eye is covered. A prism of 10° with the apex up is placed before the seeing eye in such a position that its edge lies horizontally across the center of the pupil. This produces monocular diplopia. The prism is then moved upward so as to be completely in front of the good eye and at the same time the "blind" eye uncovered. If diplopia is produced or admitted, there is sight in the "blind" eye.

(*d*) Test with colored glasses and letters: This consists in directing the individual to read a row of red and green letters through a red and green glass. The red letters will be invisible to the eye that has the green glass before it, and vice versa, but if all the letters are correctly read irrespective of their color, there must be sight in the "blind" eye. Further, the smallest letters correspond with the 20/40 test letters and if read at 20 feet indicate vision up to standard. To determine this, reverse the glasses and direct the letters to be read. As these letters are seen by transmitted light, the proper illumination back of the chart must be observed.

(*e*) Test with trial glasses: A high-plus glass is placed before the good eye and a low plus or minus before the "blind" eye. If the distant type is read, the vision in the "blind" eye is good.

(*f*) The stereoscopic test: This may be made with ordinary stereoscope, the printed matter so arranged that certain portions of it are not present before one or both eyes.

(*g*) The bar test: Interpose a ruler about 1¼ inches wide vertically midway between the two eyes at about 4 to 5 inches distance; direct the man to read from a printed page with lines at least 4 inches long. If able to read the lines, binocular vision exists.

(*h*) The action of the pupil must be carefully tested, there usually being no movement to light stimulation when the eye is blind.

9. If the examiner is not satisfied, the following examination should be made:

(*a*) Oblique examination: A careful examination of the cornea should be made with the aid of a condensing lens and loupe.

(*b*) Ophthalmoscopic examination: A searching examination with the ophthalmoscope should be made, together with an estimation of the refractive error. The pupil should be dilated if necessary.

10. *Class B.*—The most common manifestation of malingering takes the form of a statement that one eye is imperfect. Men pleading this disability may be divided into two classes:

(*a*) Those who pretend to have a visual defect.

(*b*) Those who are aware that they have a visual defect and exaggerate its effect.

No hard-and-fast tests can be prescribed for the detection of these cases. Much depends on the alertness and ingenuity of the medical examiner.

The tests with prisms are not applicable here, for there is not pretended blindness in one eye, but simply an alleged diminution of visual acuity.

11. *Class B.—Partial loss of vision in one or both eyes.*—(*a*) Mirror tests with special test cards (see equipment No. 7): Test cards are used which are identical, one having the letters reversed. The recruit is directed to read the letters on the chart across the room, and then in a mirror beside it, which reflects reverse letters that are placed over his head. The letters seen in the mirror are located double the distance of the direct letters from the man being examined. The malingerer is apt to read in the mirror the line which he read on the first card, showing that his vision is twice as good as he pretends.

(*b*) Trial frame test: Place a trial frame upon the man's face and put before the sound eye a high convex lens (+16D), and before the "blind" eye a plane or weak lens (+0.25) which will not interfere with vision. If letters placed at a distance of 20 feet are read, the fraud is at once exposed.

(*c*) Oblique examination with condensing lens and loupe to determine corneal or lenticular opacities.

(*d*) Ophthalmoscopic examination: It is probable that the malingerer will resist the ophthalmoscopic examination by frequent winking or rolling of the eyes. In this event it is best to caution the man that a report of his vision must be made, and then to postpone further examination until after the next few recruits have been examined.

(*e*) Estimate the refractive error with the use of the ophthalmoscope: If no error of marked degree exists and the media and fundi are normal, the relation between the alleged vision and the refractive condition furnishes an important clue. If the error is about +4 or −2, the visual acuity could be about 20/100, but when the defect can not be accounted for objectively and the vision is brought from 20/100 to 20/50 or 20/30 by means of a low plus or minus glass, the man is malingering.

(*f*) Retinoscopy: Look for corneal and lenticular opacities and estimate refractor errors.

12. *Occupation.*—The man's occupation in civil life may have been such that it could not have been followed without more vision than he claims.

13. In the absence of ocular defects, continuous and persistent blepharospasm, the use of colored glasses, eye shades, or eye bandages should be regarded with suspicion.

14. *Diplopia.*—Cases of malingering are occasionally met with in which the man complains he sees double. These must be investigated with the application of the ordinary tests as if they were genuine, with every precaution taken to guard against a serious lesion being overlooked. (*Memo. No. 4, Office of the Surgeon General, August 22, 1917.*)

The Aural Examination of Drafted Men at National Army Cantonments.

1. To determine the acuity of hearing, see Regulations Governing Physical Examinations, Form No. 11, P. M. G. O., page 5, section (*k*), "Hearing." All doubtful cases are to be referred to the special examiner.

2. The minimum of hearing which permits acceptance is as follows: With both ears open the hearing should not be below 10/20. One ear may be completely deaf, but the other should have one-half normal hearing; that is, 10/20. In all cases of lowered hearing, the presence of impacted cerumen should be excluded. Refer such cases to the special examiner.

3. The aural conditions which disqualify the recruit are as follows: Any aural discharge. The membrana tympani may be much retracted and thickened. If, however, the total hearing is one-half normal, 10/20, the recruit should be accepted. The membrana tympani may be perforated. If the ear is dry and the total hearing one-half normal, 10/20, the recruit should be accepted. The membrana tympani may be practically absent. If the ear is dry, and there are no such symptoms as nystagmus, nausea, vertigo, or headache, the recruit should be accepted. As before, the total hearing should be at least one-half normal.

4. Cases suspected of malingering should be referred to the special examiner. The following tests for feigned deafness or malingering are suggested:

(*a*) The Wagner malinger phone is believed to be the best instrument for detecting feigned deafness. The instrument consists of a funnel which receives the sound. This is connected with a flexible tube, which again is connected with a Y-shaped metal tube. On each of these bifurcating ends another flexible tube is attached, into the ends of which are inserted two funnels sufficiently large to cover the entire external ear. The length of the instrument is at least 2 meters in order to exclude the hearing by air conduction of sound external to the instrument. The method of making the examinations is as follows: The man who is to be examined holds the metal earpieces tightly over each ear and is directed to close his eyes during the examination. An assistant stands behind and grasps the tubes to the earpieces, holding one in each hand, ready at a sign from the examiner to stop off the tube to the right or to the left ear by pinching it tightly. The examiner also stands behind the recruit. The examiner holds the funnel or mouthpiece and whispers into it such numbers as 77, 66, 54, and short sentences. If the man who is being examined has normal hearing he hears what is whispered into the receiver equally well in both ears. In order to detect malingering the examiner nods to the assistant to close the tube which leads to the good ear. If the man who is being examined repeats correctly what is whispered into the receiver, he is hearing with the ear which he claims is deaf. It is necessary that the assistant pinch the tubes without jarring, otherwise the motion is communicated to the excluded ear, and in this way may give the recruit a hint of the working of the test.

(*b*) Another test is to exclude the good ear by having the assistant press the tragus of the recruit's ear inward. The examiner then presses firmly below the tip of the mastoid process of the good ear until the recruit flinches. Then the examiner says, "If you will open your mouth it will not hurt you." The recruit usually opens his mouth. If he does so, he is feigning deafness.

5. The Wagner malinger phone will be supplied to each base hospital.

(*Memo. No. 5, Office of the Surgeon General, August 22, 1917.*)

The Examination of Drafted Men in National Army Cantonments for Pulmonary Tuberculosis.

1. Each soldier should be required to exhale his breath, cough, and immediately breathe in. The chest should be auscultated during this process. All men who show moist sounds during cough or during respiration should be classed as doubtful cases. All cases should also be classed as doubtful in which there is well-marked dullness on percussion, increased transmission of voice, harsh respiration, and prolonged expiration, even though there be no râles present. Men under weight, or with sunken or deformed chests, should be considered with special care, and if the conditions are marked, should be classed as doubtful, even though definite signs of tuberculosis are not detected.

2. Regulations for the information of medical officers for use in connection with examinations for pulmonary tuberculosis are covered by Circular No. 20, S. G. O., 1917.

(*Memo. No. 6, Office of the Surgeon General, August 23, 1917*).

The following is published for the information of medical officers for use in connection with examinations for pulmonary tuberculosis in the military service.

The duties of the examiner are:

1. To exclude cases of manifest tuberculosis from the Army.
2. To hold to service men who allege tuberculosis as a ground for exemption or discharge on the basis of insufficient or incorrectly interpreted signs and symptoms.
3. To determine in the case of soldiers accepted for the military service the existence of pulmonary tuberculosis, and to decide whether or not the disease has been incurred in the line of duty.

Men who desire to serve their country may conceal from patriotic motive symptoms of tuberculosis which they know or suspect to exist. Some tuberculous patients will seek enlistment with a view of obtaining treatment and a pension. Some soldiers who have volunteered may repent their action and allege symptoms of tuberculosis with a view to securing discharge. Some conscripts may be expected to claim the existence of tuberculosis as a ground for exemption, and may fortify their claims by certificates of physicians and by radiographs. There will probably be many cases in which pulmonary tuberculosis will have been diagnosticated on the ground of subjective symptoms and of physical signs which are normal or indicate unimportant and healed lesions of some kind.

It is necessary, therefore, that conclusions of the examiner shall be based only on physical signs, sputum examinations, and radiographs. Statements of the subject as to symptoms will not be accepted as proof of the existence of tuberculosis unless supported by objective evidence.

It is the duty of examiners to protect the interests of the Government by preventing men from entering the service who have manifest tuberculosis. It is equally their duty to prevent the escape from service on the ground of tuberculosis of men who present slight or doubtful deviations from the normal. It is therefore necessary to insist that recommendations for discharge for tuberculosis of otherwise apparently healthy and vigorous men shall be based only upon the presence of definite and plainly marked signs of pulmonary lesions.

The following signs will not be regarded as evidence of pulmonary disease in the absence of other signs in the same portion of the lungs:

1. Slightly harsh breathing, slightly prolonged expiration over the right apex above the clavicle anteriorly and posteriorly to the third dorsal vertebra. The same signs at the extreme apex left side.
2. Same signs second interspace right anteriorly near sternum (proximity of right main bronchus).
3. Increased vocal resonance, slightly harsh breathing immediately below center of left clavicle.
4. Fine crepitations over sternum or heard when stethoscope touches the edge of that bone.
5. Clicks heard during strong respiration or after cough in the vicinity of the costosternal articulations.
6. The so-called atelectatic râles heard at the apex during the first inspiration which follows a deeper breath than usual or a cough.
7. Sounds resembling râles at base of lung (marginal sounds), especially marked in right axilla, limited to inspiration.
8. Similar sounds heard at apex of heart on cough (lingula).
9. Slightly prolonged expiration at left base posteriorly.
10. Very slight harshness of respiratory sounds with prolonged expiration in the lower paravertebral regions of both lungs posteriorly, most marked at about angle of scapula, disappearing a short distance above that point, equal on both sides, or slightly more marked at the angle on one side, more frequently the left.

The apices.—Incipient tuberculosis of the apex is often erroneously diagnosticated:

1. On account of misinterpretation of normal signs.
2. Because the importance of minor differences between the two sides is exaggerated.
3. Because signs of a healed lesion are considered to indicate an incipient lesion.

For No. 1, see No. 1, page 1.

With regard to No. 2, it is not too much to say that, given a sufficiently minute examination, there would be few men who would fail to show some signs which might be interpreted as having pathological significance.

No. 3.—The truly incipient tuberculosis of the apex generally escapes detection when in an active state. When healed it constitutes the abortive tuberculosis of Bard. Induration of the apex has been described by Krönig as a nontuberculous affection. The important question here is whether the signs present indicate a healed or active process. They are harshness of respiratory sounds, prolongation of expiration, increased conduction of voice, and more or less dullness on percussion. These signs are caused by induration of pulmonary tissue. Induration caused by acute inflammation is relatively rare in tuberculosis. It is not characteristic of a recent but of an advanced process, when present to an extent which permits detection by clinical methods. When it does occur, the subject is usually febrile and evidently ill. In cases of ambulant subjects in apparently good health the presumption is that the above signs indicate an old not an incipient lesion. The abortive tuberculosis of Bard and Krönig's apical induration, whether or not it is due to an obsolete tuberculosis, are not a cause for rejection in the absence of tuberculous disease at a lower level in the upper lobe. Narrowing of Krönig's isthmus is extremely common. It is not a sign of recent disease, but of contraction of the lung from old disease. In consideration of the frequent asymmetry of the bony structures about the apices, slight differences in the width of the isthmus on the two sides are unimportant. A distinct contraction of one side points to the existence of a tuberculous focus of the upper lobe; whether or not this focus is of clinical importance must be determined from the signs in the individual case. Contraction of the isthmus per se is not a cause for rejection. The attention of examiners is particularly invited to the necessity of exercising great conservatism in their interpretation of physical signs over the apices. Interpretation of such signs as indicating active tuberculosis would in many cases do the Government great injustice, leading to the exclusion of men who are fit for service. The only trustworthy sign of activity of apical tuberculosis is the presence of persistent moist râles.

DIAGNOSIS OF TUBERCULOUS LESIONS IN GENERAL .

THE ACUTE LESION.

If small, this lesion is manifested by râles with or without changes in breath sounds, percussion note, and voice transmission. The more acute the lesion the greater the probability that its presence will be indicated only by râles. If of large extent the process is distinctly a bronchopneumonia, generally caseous; characterized at first by the usual signs of penumonia, crepitant and subcrepitant râles; when caseated by absence of râles except coarse and distant râles from the larger bronchi, also by impairment of expansibility of the lung, and more or less dullness or tympanitic resonance; when breaking down by cavity signs and the presence of loud moist râles of varying size. Large acute lesions are rarely found in candidates for enlistment and the small acute lesion is also comparatively rare. Tuberculosis as it presents itself to the Army examiner is usually of a chronic type.

THE ARRESTED CHRONIC LESION.

It is by no means rarely the case that a tuberculous lesion will run its course and become arrested without the knowledge of the subject, who may state in perfectly good faith that he has never had tuberculosis. The arrest of a lesion is indicated by the absence of râles. Such a lesion is characterized by harshness of breath sounds and prolongation of expiration, by increased vocal fremitus and resonance, and by more or less pronounced dullness on percussion.

THE ACTIVE CHRONIC LOCALIZED LESION.

Activity is denoted by the presence of râles, together with the other signs described under the arrested lesion. Râles do not necessarily show that the lesion is extending nor that the activity is of much clinical importance, but in military practice the presence of râles accompanied by breath changes and other signs should be an indication for rejection. The more active and recent the chronic lesion the less marked the breath changes and the more conspicuous the râles.

DISSEMINATED TUBERCULOSIS.

True miliary tuberculosis is not likely to come to the attention of the military examiner. The peribronchial type is common and frequently not recognized. In the adolescent the peribronchial tuberculosis may be extending from the deep lung without as yet developing a superficial focus. It may be manifested only by the presence of distant râles with or without slight changes in the breath sounds which are of a slight bronchovesicular quality. If the case is well marked there will be impairment of expansibility of the affected side and increased vocal resonance. Less pronounced cases are distinguished from chronic bronchitis only by the character of the râles (coarser in bronchitis) and by their topical distribution.

More frequently the peribronchial type is found accompanying a superficial focus. Bronchovesicular breathing may extend some distance below the limits of the superficial focus with or without râles. But the most important manifestation of the peribronchial type is extension to the formerly sound side. There may be a small, obscure, apparently arrested lesion of one side, usually the right, with a peribronchial extension involving the whole or the greater part of the other lung manifested only by the presence of râles after expiration and cough.

A definitely demonstrated tuberculous lesion of more than insignificant size below the apex is cause for rejection, whether such lesion be active or inactive. But men whose qualifications make their service of especial value to the Government should not be rejected without previous report of their cases to higher authority if the lesion found is not very large and is entirely quiescent. In case of the acceptance of a man with tuberculosis a careful record of the case should be made for the protection of the Government. Such cases should be frequently reexamined.

In ambulant afebrile subjects harshness of breath sounds and prolongation of expiration characterize the old and relatively dry lesion, while the more acute the process the less marked are the breath changes and the greater are the conspicuousness and significance of râles. No examination for tuberculosis is complete without auscultation following a cough.

THE METHOD OF "EXPIRATION AND COUGH."

It is best executed as follows: Starting from the state of rest of the lung the subject forcibly expels the air from the lungs, reserving the last portion of the expiration for a short cough, after which inspiration immediately follows, but only enough air is inhaled to return the lung to the state of rest. The idea is to diminish the size of the bronchi as much as may be by expiration, then to cough to stir up forcibly such fluid as may be present in them. The moisture is more likely to be moved by the current of air and so produce râles when the tubes are of their least caliber. This procedure should invariably be employed in examinations in order to determine the activity of lesions found by other signs and also to detect the existence of fresh disseminated tuberculosis.

EXAMINATION OF SPUTUM.

The presence of tubercle bacilli in the sputum is a cause for rejection. Examiners should, however, take pains to convince themselves that the sputum examined came from the lungs of the person under examination. To this end they should insist that the sputum be coughed up in their presence or in that of the pathologist who makes the microspcopical examination.

TUBERCULIN.

It is well recognized that a positive reaction to tuberculin, especially in the young adult, is not a proof of the presence of active, clinically important tuberculosis. Tuberculin only demonstrates activity of the tuberculous process in the clinical sense when it can be shown to produce a focal reaction. Such reaction is not without danger. Since, therefore, tuberculin rarely leads to a correct diagnosis and may do injury its general use in the diagnosis of tuberculosis in examinations for enlistment is prohibited.

X RAY.

Only well-marked pathological changes are revealed by radioscopy. For the accurate diagnosis of tuberculosis recourse should always be had to the study of the X-ray negative. It is not of course practicable to use radiography extensively for the determination of tuberculosis during the examination of recruits. But the X ray will doubtless be often employed in doubtful or disputed cases, so that it is necessary to consider the rules which should obtain in reading the radiograph.

Morbid changes in the lungs are shown by shadows due to two substances: First, blood; second, fully organized connective tissue. Blood imprints a shadow on the negative only when present in abundance. The congestion of lobar pneumonia is typical. Broncho-pneumonia of tuberculous origin may also cast shadows, but only when the process is acute, the congestion great. Frequently the tuberculous process runs so chronic a course that the inflammatory reaction is insufficient to congest the lung enough to produce a shadow. The shadow of congestion is not sharply outlined; it melts away at its borders.

Connective tissue in the parenchyma of the lung away from the hilus is not normally present in sufficient quantity to retard appreciably the passage of the X rays, except as it occurs in connection with and as a part of the various tubes, bronchi, blood vessels, and lymphatics. As a result of proliferative inflammation, connective tissue develops as a fibrous thickening of these tubes, particularly the bronchi and the lymph vessels, which casts a shadow deeper than normal; the older the process and the better organized the tissue, the denser the shadow and the sharper its outline. Tubercle, caseations as such, cast no shadows distinguishable from the other tissues of the parenchyma. It has been found that cubes, 1 cubic centimeter in size, of caseous tubercle when embedded in a healthy lung were indistinguishable by the X ray. But if the caseations become calcified or are even impregnated abundantly with mineral salts they become opaque to the X ray. In general, and especially if one has to do with the shadows of tubes, it may be said that fuzziness of outline means acute vascular congestion, an active process. On the other hand, when the shadows of the cubes are sharp we have a process which if active at all is at least not characterized by great acuity, is not congestive. There is what is called dry tuberculosis of the lung tissue, which inclines to abundant formation of connective tissue, to dry caseations and cicatrizations, or to complete transformation into fibrous tissue, characterized by sharply outlined granular spots and by more or less sharply marked bands and streaks. Special attention is called to the persistence of the sharply outlined dots and lines when activity of the tuberculous process no longer exists.

The sharply outlined thickenings of the bronchi and other tubes may be evidence of an old inflammation now entirely obsolete, or may be simply records of the ancient history of the pulmonary tuberculosis.

We do not see tubercles in the X-ray negatives. What we see is either sharply outlined calcifications and fibroses, or fuzzy congestions, or a combination of the two conditions. Cases are seen in which the X ray in general gives the same findings in both lungs while the autopsy proves one lung severely, the other slightly, diseased. Such cases illustrate well the limitations of X-ray diagnosis. What is seen in the X-ray negative is the thickened framework of old inflammation in the two lungs, in one accompanied by much parenchymatous disease of recent origin, in the other accompanied by little, the said parenchymatous disease being invisible to the X ray because neither sufficiently congested nor sufficiently organized to cast shadows.

Extensive systems of lines, many sharply outlined spots, dense streaks, do not then show an acute process. Persons in good health with nearly or quite arrested tuberculosis are sometimes found by the X ray to present a picture of very extensive changes of this kind. Yet the prognosis in such cases is not good, if the subjects be subjected to severe strain. The radiograph is a proof that the lungs have undergone serious changes. The danger is either that hardship will lead to a reactivation of the numerous more or less quiescent tuberculous lesions or, if the process has been largely of the nature of fibrosis, that the lungs have been so damaged thereby as to unfit the person for an active life. If then the radiograph shows extensive dappled or mossy shadows or numerous spots and streaks the recruit should be rejected, however good his health may appear to be. Shadows of a homogeneous opacity result from pleurisy and are not necessarily a cause for rejection in the absence of other signs.

Tuberculosis of the bronchial glands is a diagnosis often made from the radiograph on very slight foundation. The fact is that pronounced swelling of the lymph glands is characteristic of primary, not of advanced tuberculosis. It is rare that intrathoracic gland tuberculosis is of any clinical importance in the adult. With few exceptions cases of bronchial gland tuberculosis which lead to true symptons of disease are confined to the first and second years of life. Only rarely, especially in adults, is so-called hilus gland tuberculosis a purely glandular process; it is rather a more or less pronounced disease of the surrounding hilus-tissue in the form of peribronchial and infiltrative processes of the neighboring pulmonary tissues. That is, the interscapular dullness relied upon for the diagnosis of enlarged glands, if caused by lung conditions, is due to tuberculous processes in the region of the hilus, participation in which to any important extent on the part of the glands is a matter of conjecture. The presence of masses in the neighborhood of the hilus as shown by the X ray may, indeed, be cause for rejection, but rejection on account of relatively small opacities in that region on the ground that they indicate a bronchial gland tuberculosis of clincal importance certainly should not be permitted.

RÉSUMÉ OF INDICATIONS FROM X-RAY NEGATIVES.

The X ray shows: (1) Tuberculous disease confined to region of hilus in deep lung; (2) extension upward toward apex or downward and outward toward base, confined to deep lung; (3) a fine line or two extending to apex with or without small focus or foci there—condition not determinable by physical signs; (4) clouding of apex without marked lines from hilus, probably largely pleuritic; (5) well-marked lines extending to superficies of apex, usually, but not necessarily, with foci there—lesion accessible to physical examination; (6) lines extending toward shoulder as well as apex (*a*) if confined to deep lung may mean early and now obsolete exacerbation, (*b*) if extending to superficies denote larger lesion and less immunity than (5); (7) more or less widely diffused spots, lines, and streaks through a considerable portion of lower lobe approaching periphery of lung, with few or no auscultatory signs—deep peribronchial tuberculosis; (8) more extensive streaked opacities involving greater part of one or both lungs and extending to periphery with few or many physical signs—fibrocaseous tuberculosis, fibrosis preponderating in proportion to scantiness of more or less rounded spots or dots.

Conditions as shown by (1), (2), (3), (4), and (6), (*a*) are not causes for rejection. Cases under (5) are to be determined by physical examination. Cases under (6) (*b*), (7), and (8) are to be rejected.

(*Cir. No. 20, Office of the Surgeon General, June 13, 1917.*)

The Cardiovascular Examination of Drafted Men of National Army Cantonments.

1. The examination should in all cases include:

(*a*) Location and determination of character of apex impulse.

(*b*) Auscultation of the heart sounds over apex, lower sternum, and second and third interspaces to right and left of sternum, noting accentuation of sounds and murmurs.

(*c*) Inspection of root of neck and upper thorax and percussion of first interspace on each side of manubrium for evidence of aneuysm.

(*d*) Count of radial pulse, observation of its rhythm, and palpation of radial arteries for unusual thickening of high tension.

(*e*) Exercise test: Hopping 100 times on one foot. A close count heart rate with stethoscope over apex, listening for murmurs and noting how long tachycardia and unusual dyspnea persist. After two minutes neither should be marked.

2. The examiner should bear in mind the evidences of valvular disease, which may easily be overlooked. Slight mitral stenosis, in particular, may give rise to a murmur so faint that it may be audible only after exercise or when recumbent. A definite accentuation of the pulmonic second sound or a snapping first sound should always suggest careful scrutiny for other evidence of mitral disease. A slight aortic diastolic murmur, audible in a limited area to the left of the sternum below the third rib, may also be passed over. Distinct ringing character of the aortic second sound may indicate either high blood pressure or dilatation of the aortic arch, and should be watched for.

STANDARD FOR UNCONDITIONAL ACCEPTANCE.

3. Subjects with apex impulse within the left nipple line and not below the fifth interspace, of normal, not heaving character, with normal sounds, free from murmurs, without pulsation or dullness above the base of the heart, with regular pulse of normal rate, who have no unusual thickening of the arteries or evidence of high blood pressure, and who show a normal response to the exercise test, may be unconditionally accepted.

4. All others who deviate from the above requirements in any particular shall be held for further examination.

5. Regulations for the guidance of the cardiovascular specialists are covered in Circular No. 21, S. G. O., 1917.

(*Memo. No. 7, Office of the Surgeon General, August 23, 1917.*)

The following is published for the information of medical officers in the examination of the heart and blood vessels of candidates for the military service.

The duties of the examiner are:

1. To exclude from active service in the Army any man affected with disease of the heart or blood vessels which impairs his ability to undergo severe bodily exertion.

2. To hold to the service men who have been recommended for rejection or discharge because of supposed defects which do not indicate disease and do not impair the individual's ability to undergo severe bodily exertion.

3. To determine the importance of definite defects in the case of candidates for special service, not entailing severe bodily exertion, and to recommend acceptance or rejection for such special service.

Men who desire to serve their country may, from patriotic motives, endeavor to conceal a known valvular lesion which has given no symptoms. On the other hand, men drafted for service may allege or feign symptoms to obtain exemption. Conscripts may be expected to present physicians' certificates to substantiate the existence of valvular disease. Many of these may be given in good faith, because of inadequate knowledge of the significance of certain frequent murmurs. On the other hand, a slight but important valvular lesion, most often mitral stenosis, may be overlooked because the murmur is inconspicuous, and serious harm to the individual and loss of time and money to the Government may result.

It is necessary, therefore, that the conclusions of the examiner shall be based on objective evidence in the widest sense, including both physical signs, cardiac rhythm measurement of the blood pressure, and the observed effect of effort. Nevertheless, in the presence of questionable signs or symptoms, the history, especially of past rheumatic fever, may be a factor in the final decision. No statements of the subject, however, will be accepted as proof of the existence of a cardiovascular defect unless supported by objective evidence.

Since it is the duty of examiners to protect the interests of the Government by preventing men from entering the service whose circulatory systems may be expected to break down under strain, and equally by preventing the exemption or discharge of fit subjects because of unimportant deviations from the normal, it will be necessary for them to exercise every care in the interpretation of their findings and to bear in mind constantly the murmurs and other departures from the supposed normal which may occur in perfectly healthy hearts.

The examination should in all cases include:

1. Location and determination of character of apex impulse.
2. Auscultation of the heart sounds over apex, lower sternum, and second and third interspaces to right and left of sternum, noting accentuation of sounds and murmurs.
3. Inspection of root of neck and upper thorax and percussion of first interspace on each side of manubrium for evidence of aneurysm.
4. Count of radial pulse, observation of its rhythm, and palpation of radial arteries for unusual thickening or high tension.
5. Exercise test: Hopping 100 times on one foot. At close count heart rate with stethoscope over apex, listening for murmurs, and noting how long tachycardia and unusual dyspnea persist. After two minutes neither should be marked.

The examiner should bear in mind the evidences of valvular disease, which may easily be overlooked. Slight mitral stenosis, in particular, may give rise to a murmur so faint that it may be audible only after exercise or when recumbent. A definite accentuation of the pulmonic second sound or a snapping first sound should always suggest careful scrutiny for other evidence of mitral disease. A slight aortic diastolic murmur, audible in a limited area to the left of the sternum below the third rib, may also be passed over. Distinct ringing character of the aortic second sound may indicate either high blood pressure or dilatation of the aortic arch and should be watched for.

STANDARD FOR UNCONDITIONAL ACCEPTANCE.

Subjects with apex impulse within the left nipple line and not below the fifth interspace, of normal, not heaving character, with normal sounds, free from murmurs, without pulsation or dullness above the base of the heart, with regular pulse of normal rate, who have no unusual thickening of the arteries or evidence of high blood pressure, and who show a normal response to the exercise test, may be unconditionally accepted.

All others who deviate from the above requirements in any particular shall be held for further examination. In concentration camps such examination shall be by the cardiovascular consultants, who shall employ all methods of diagnosis necessary for a satisfactory determination of each case.

The further examination will divide the subjects held into three groups:

1. Those with cardiovascular disease of sufficient importance to disqualify for any service.
2. Those with transient or insignificant abnormalities known to occur in perfectly healthy hearts and compatible with severe bodily exertion.
3. Those with defects sufficient to disqualify for full active service, but compatible with special service requiring little bodily exertion.

PRINCIPLES OF INTERPRETATION.

The following principles are laid down for the guidance of examiners in their interpretation of abnormal signs and symptoms. In many cases the interpretation must be purely individual and based on the cumulative evidence of a number of relatively slight deviations from the normal. It can not be too strongly insisted on that, given a heart of normal size and responding normally to effort, any murmur that is heard should be considered accidental and insignificant unless it can be positively demonstrated that it is a mitral or aortic diastolic murmur. It should also be constantly borne in mind that the excitement of the examination may produce violent and rapid heart action, often associated with a transient systolic murmur, which effects may erroneously be attributed to the effects of exertion. They will usually disappear promptly in the recumbent posture, but the examiner must be shrewd to distinguish the excitable individuals and take measures to eliminate psychic influences from the test, so far as possible.

1. *Hypertrophy and dilatation of the heart.*—Impulse to the left of the nipple line or below the sixth rib and of heaving character is cause for rejection. Its cause, either valvular disease or hypertension in the majority of cases, should be sought for. It should not be made a primary diagnosis unless careful examination fails to reveal a cause.

Impulse within these limits, but definitely heaving, or relative cardiac dullness extending to the left of the nipple line, or more than 4 centimeters to right of the median line in large, more than 3 centimeters in small individuals, should lead to careful examination for valvular disease, high blood pressure, emphysema, or other cause. Unless such other cause can be found, the response to exercise shall be the guide. Those cases with normal response to exercise may be accepted for special service (3); all others shall be rejected.

2. *Valvular diseases.*—Cardiac murmurs are the most certain physical signs by which valvular disease may be recognized and its location determined, but murmurs are very frequent in the absence of valvular lesions and may occur in perfectly healthy hearts, especially under the influence of excitement and exertion. Such accidental murmurs are always systolic in time. The most frequent are as follows:

(*a*) Those heard at the apex on excitement, especially when recumbent.

(*b*) Those heard over the second and third left interspaces during expiration, disappearing during forced inspiration. These are particularly common in men with flexible chests, who can produce extreme forced expiration and under such circumstances may be associated with definite thrill.

(*c*) Systolic accentuation of the respiratory murmur, especially on inspiration, heard near the apex or over the back.

None of the above shall be considered disqualifying for active service.

Other systolic murmurs unassociated with enlargement of the heart, alteration of the first sound, accentuation of the pulmonic second sound, or abnormal response to exercise may also be considered as without significance, but should be noted.

Loud systolic murmurs, audible at the apex and in the left back, if associated with any enlargement of the heart, with snapping first sound or accentuation of the pulmonic second sound shall be cause for rejection. If unassociated with these other signs and the response to exercise be normal, the recruit may be accepted for special service (3).

Systolic murmurs at the base, except as specified above, especially those heard in the second right intercostal space, require more careful scrutiny. They may be due to disease of the aortic valves. In this case they should be harsh, conveyed well into the neck, associated with an aortic diastolic murmur, with thrill, or with a marked enfeeblement of the aortic second sound. Any of these combinations shall disqualify. They are more often due to dilatation of the aorta, either syphilitic or arteriosclerotic. The other signs of dilatation should then be sought, increased dullness in the first and second interspaces to either side of the manubrium, pulsation in this area, accentuation of the aortic second sound. In doubtful cases X-ray examination and Wassermann test should be obtained. Where a slight systolic murmur in this situation is the only abnormal sign and the response to exercise normal, giving rise neither to breathlessness nor thoracic pain or distress, it shall not disqualify. Proved dilatation of the aortic arch, or syphilis of the aorta, shall be cause for rejection for active service, but, if without symptoms, shall not disqualify for special service (3). It shall be noted on the record. Systolic murmurs heard over the second and third left interspaces are almost always accidental and insignificant. When loud and harsh, heard over the upper left chest, front, and back, or associated with thrill during quiet breathing, they may indicate congenital cardiac disease and shall disqualify.

All diastolic murmurs at apex or base, including presystolic murmurs, shall be considered evidence of valvular disease and cause for rejection. The secondary signs should be sought for, viz, enlargement of one or both sides of the heart, alteration of the first or second sound, particularly a snapping first sound and accentuated pulmonic second sound in mitral disease, and the characteristic pulse of aortic insufficiency. In doubtful cases a definite history of rheumatic fever may be given weight. The exact diagnosis should be noted on the record.

3. *Aneurysm and dilatation of the aortic arch.*—Aneurysm, wherever situated, shall disqualify.

Aneurysm of the thoracic aorta, unless large or placed near the anterior thoracic wall or giving rise to pressure symptoms, is difficult of detection. Simple dilatation of the aortic arch is a diagnosis which can rarely be made positively from physical signs alone. Therefore, when pulsation above the base of the heart, diastolic shock, well-marked dullness laterally to the manubrium, with a ringing second sound or a systolic or diastolic murmur over the dull area, or tracheal tug, inequality of the pupils, difference in the two radial pulses, alteration of the voice, or suspicious symptoms, suggest the existence of aneurysm or dilatation, X-ray examination and Wassermann test should be obtained. Any considerable dilatation of the aorta shall disqualify.

Slight dilatation with a positive Wassermann reaction shall also disqualify. Slight dilatation with a negative Wassermann reaction shall not disqualify, if it be the only impairment and unassociated with symptoms and abnormal response to exercise. Precordial or other anginal pain, which the examiner is convinced is real, may occur without dyspnea and is significant.

4. *Disturbances of rate and rhythm.*—A persistent rate of 100 or over, when recumbent, should suggest the search for exophthalmic goiter, tuberculosis, or other infection, which would constitute cause for rejection. Persistent rapid heart action, in the absence of proof of these, and unassociated

with enlargement of the heart may require study in hospital to determine its significance. A constant rate of 100 or more should disqualify. Temporary tachycardia on excitement is common. If extreme, the decision as to its significance must depend on other findings, especially on the response to exercise. A reliable history of attacks of severe tachycardia in the past, with any breathlessness on exertion, should be reported to the camp surgeon with request for watching the recruit during his training.

A persistent rate of 50 or under suggests heart block and this should be excluded by tracings. Heart block shall disqualify. Slow rate with normal rhythm and normal response to exercise shall not disqualify. Complete irregularity of the pulse indicates auricular fibrillation and shall disqualify. It is not compatible with normal response to exercise.

Occasional dropped or premature beats, if the heart be of normal size and the response to exercise normal, are of no significance. Very frequent dropped or premature beats require reexamination to determine if they are temporary. When persistent, but the only impairment, they should be reported to the camp surgeon with request for watching the recruit during his training.

The irregularity which consists in a quickening of the rate during inspiration and slowing during expiration is common in the young and is of no significance. It may be recognized most easily with the subject recumbent and breathing deeply.

5. *Arteriosclerosis and hypertension.*—All subjects with thickened arteries, apparently tense pulse, and accentuation of the aortic second sound, shall have their blood pressures recorded when lying quietly, the systolic pressure by the palpatory and auscultatory, the diastolic by the auscultatory method. A systolic pressure of 200 mm. Hg. or over, or a diastolic of 120 mm. Hg. or over shall disqualify. A systolic pressure persistently above 160 mm. or a diastolic above 100 mm. shall disqualify for active service, but if this be the only impairment, the recruit may be accepted for special service (3). The urine should always be tested for albumin in these cases.

Simple thickening of the arteries without high blood pressure or enlargement of the heart and with normal response to exercise shall not disqualify.

6. *Other conditions.*—Cases with unusual findings not covered by these instructions may be determined on the general principle that, if the heart be not enlarged and its response to effort be normal, it shall not disqualify. If the response to effort be impaired, but the heart normal in every other respect, and if the subject has not been capable in the past of ordinary active exercise, he should be accepted for special service (3) or reported to the camp surgeon for watching during his training.

(*Cir. No. 21, Office of the Surgeon General, July 14, 1917.*)

The Examination of Drafted Men at National Army Cantonments for Nervous and Mental Diseases.

PRELIMINARY EXAMINATION.

1. Medical officers making preliminary examinations will look especially for the following signs and symptoms:

(*a*) *General.*—Multiple stigmata of degeneration; evidences of general mental and nervous inferiority—in a word, those characteristics which indicate a "second-class" human being.

(*b*) *Head and neck.*—Multiple stigmata, especially anomalies in size and shape of the head; too high forehead, too large or too small head, marked flattening of one side of the head, scars due to depressed fractures; scars on tongue, face, or forehead (epilepsy), facial paralysis, tremor of tongue or lips, speech anomalies, slurring of words (paresis), scanning speech (multiple sclerosis), stammering, stuttering, pupils unequal in size; reaction of pupils to light; squints or paralyses or anomalies of muscles of the eyeball, evident on inspection, ptosis single or double, large thyroid.

(*c*) *Upper extremities.* Evidence of tenderness over nerve trunks; paralysis, wastage or atrophy of any muscle; contractures or incoordinations.

(*d*) *Lower extremities.*—Muscular weakness or wasting, or contractures; all disturbances of station and gait.

(*e*) *Mental.*—Ask each man if he has had fits, been in an asylum, or ever treated for mental or nervous disease. Look for marked general nervousness, emotional elation, overtalkativeness, excitement, emotional depression, apathy, listlessness; evidence of lack of understanding and comprehension of what is said to him, as indicated by the replies to questions during examination.

2. Those who exhibit any of the above symptoms or who are considered by the preliminary examiner on any other ground to be of doubtful mental or nervous integrity will be reported to the special examiner.

SPECIAL EXAMINATION.

3. The following instructions will govern the special examiners in these branches:

(*a*) Circular No. 22, Office of the Surgeon General, August 1, 1917, excepting paragraph 3, which does not apply in this particular examination.

(*b*) Queerness, peculiarities, and idiosyncrasies, while not necessarily inconsistent with sanity and ability to serve, may be the beginnings or surface markings of mental disease. Not every man who shows these will be found unfit, but in such cases care will be taken to rule out those with disqualifying defects.

4. The following definitions indicate an individual to be considered as feeble minded, suitable for recommendation for discharge:

(*a*) An idiot is a person so deeply defective in mind from birth, or from an early age, that he is unable to guard himself against common physical danger. An imbecile is a person who is so deeply defective in mind from birth, or from early age, as to be incapable of earning a livelihood, but able to guard himself against common physical danger.

(*b*) A moron is a person who is capable, under favorable circumstances, of earning a livelihood, but who is incapable from mental defect existing from birth or from early age of competing on equal terms (in the sphere of life in which he was born or in one to which both he and his fellows may have been transplanted, as an Army) with his normal fellows or of managing himself and his affairs with ordinary prudence. The morons, the highest type of feeble-minded, form a numerous class in the population. Undoubtedly a considerable number will be met with in this examination. Some of the highest in the group may succeed in remaining in the service if accepted. The great majority will fail, and none can be other than indifferent soldiers. All should be recommended for discharge.

5. Special examiners will be particularly on the lookout for dementia precox, the most frequent mental disease. All suffering from dementia precox, recent or old, will be discharged. These cases do not recover.

6. An established diagnosis of epilepsy disqualifies.

7. All men known to be habitual users of cocaine, opium, or any of its derivatives will be recommended for discharge.

8. *Chronic inebriety* (*chronic alcoholism*).—Those in whom this diagnosis is made must be considered individually. As a general standard all who show evidence of degeneration of brain or other organs should be recommended for rejection.

9. Neurological examinations will be made of all syphilitics if practicable.

(*Memo. No. 8, Office of the Surgeon General, August 23, 1917.*)

1. For the safety, efficiency, and economy of the military service, it is highly essential that nervous and mental disease be recognized at the earliest possible moment. Nervous and mental diseases may, and frequently do, exist in persons who are strong, active, and apparently healthy and who make no complaints of disability. Such persons are, however, more than useless as soldiers, for they can not be relied on by their commanders, break down under strain, become an encumbrance to the Army and an expense to the Government. Disorders of this character are often demonstrable only as the result of a painstaking and special examination directed toward the mind and nervous system. This circular is published for the special purpose of calling the attention of medical officers to the particular diseases most frequently overlooked on general examination and the symptoms most important to their diagnosis, and to certain characteristics in personality and in the behavior, which might raise the question of the existence of mental disease.

2. The duties of the examiner are to be familiar with the symptoms and significance of nervous disease and the means of eliciting them, and to recommend for rejection from service all those in whom any of the evidences mentioned in paragraph 4 are demonstrated. He should determine the importance of slight variations from the ordinary normal standard and recommend acceptance or rejection on the basis of them. He should search for symptoms or tendencies which may be concealed, for the purpose of obtaining service, and he should recognize symptoms which are feigned for the purpose of avoiding service. Organic nervous disease can not be feigned in a way to deceive a skillful and careful examiner. To demonstrate feigned insanity, a period of several weeks' observation may be necessary.

3. It is assumed that the examiner is familiar with the current methods of examination in neurology and psychiatry and that he will make careful employment of them in all cases referred to him for consultation. But, in addition to acting as a consultant to whom cases are referred, he must also himself select cases for special examination. To this end he is directed to be present as often as possible when the recruits are gathered together at times of instruction and training and for such general medicinal purposes as vaccinations, inoculations, group examinations of the heart, lungs, etc. At such times he should discriminatingly observe the appearance and behavior of the recruits, pass in and out among them, converse with them when possible, and report to the camp surgeon the names of any whom his observations have led him to consider as requiring a special neurological and psychiatric examination. By thus learning, in a way, to know the recruits personally, his special training should enable him now and then to pick out one who might pass the general medical examination and yet whom special examination would clearly prove to be a hazard to the Army.

Queerness, peculiarities, and idiosyncrasies, while not inconsistent with sanity, may be the beginnings of surface workings of mental disease. A soldier is too important a unit for such variations from a standard of absolute normality not to be looked into before the recruit who presents them is accepted for service. To aid the neurologist and psychiatrist in these ways, the camp surgeon shall direct all medical officers, dental surgeons, instructors, hospital sergeants, barrack sergeants, and others who come in close contact with recruits, to refer to him, the camp surgeon, all recruits who persistently show any of the following characteristics: Irritability, seclusiveness, sulkiness, depression, shyness, timidity, over boisterousness, suspicion, sleeplessness, dullness, stupidity, personal uncleanliness, resentfulness to discipline, inability to be disciplined, sleep walking, nocturnal incontinence of urine, and any of the various characteristics which gain for him who displays them the name of "boob," "crank," "goat," "queer stick," and the like.

The reaction of the pupils to light should be part of every medical examination, and if this is not systematically provided for, the neurologist and psychiatrist should be directed to determine it. This could be done at the time of group inoculations and with the help of a hospital sergeant could be made rapidly. Electric light should be used. It is especially important in the examination of officers and recruits above 25 years of age.

It is further recommended to camp surgeons to provide neurological examinations for all cases of syphilis.

4. The following are cause for rejection from military service:

A. Organic nervous diseases.
B. Mental defect.
C. Mental disease and pathological mental states.
D. Confirmed inebriety (alcohol or drugs).

A. Organic nervous disease.—Certain after effects of organic nervous disease need not be causes for rejection provided (1) that the disease is no longer operative and is not likely to recur; (2) that the effect left by it does not prevent a satisfactory fulfillment of military duties. Examples of such conditions are paralysis of a few unimportant muscles following poliomyelitis, slight unilateral hypertonicity as a result of an infantile hemiplegia in a man now robust, and various traumatic conditions. A history of hemiplegia occurring after infancy should always exclude even if no symptoms remain.

Existent organic nervous disease should always exclude. For example, neuritis, of one or many nerves, while susceptible of recovery without resultant defect, is none the less a cause for rejection as long as its exists. The following organic nervous diseases are mentioned specifically as they are the ones which frequently present few symptoms and may pass undetected by even the most skillful examiner.

Tabes, or locomotor ataxia.—Look for Argyll-Robertson pupils, absent knee-jerks, Romberg symptom, ataxia of hands or legs (especially with closed eyes), hypotonia, anesthetic areas of skin. History is negative or that of slow progression, failing sexual power, and pains in the legs or back, often described as rheumatism. In doubtful cases it is required that the Wassermann reaction in the blood be determined, and the cerebrospinal fluid be examined as to the Wassermann reaction, cellular and globular content, etc.

Multiple sclerosis.—Look for intention tremor, nystagmus, absent abdominal reflexes, and increased tendon reflexes. The scanning speech may be mistaken for stammering. No history of pain, but sometimes history of urinary disturbance.

Progressive muscular atrophies, dystrophies, and syringomyelia.—Look for atrophies in the small muscles of the hand and in the muscles of the shoulder girdle, with fibrillary twitching. These plus anesthesia for heat and cold (scars on hands from cuts and burnings) equal syringomyelia. History negative or in reference only to awkwardness. No history of pain. Syphilitic spinal disease imitates these conditions closely.

Epilepsy.—Look for deep scars on tongue, face, and head. The voice indicates fatigue. If history alone, verify by correspondence with physicians.

Hyperthyroidism.—A nervous disease in its effects. Look for persistent tachycardia, exophthalmos, tremor, enlarged thyroid. History of general nervousness.

In addition to the foregoing, there are certain sets or combinations of symptoms which should exclude from service. They may not by themselves be sufficient for an exact diagnosis, but they prove beyond cavil that the nervous system is seriously diseased and totally undependable for any continuous service.

Pupils.—Argyll-Robertson.

Nystagmus (in one not an albino), absent abdominal reflexes, intention tremor. Combination of any two should constitute a cause for rejection.

Babinski reflex.

Disturbances of station or gait.

Disorders of speech on test phrases (viz, "Third riding artillery brigade") plus facial tremor or any other one symptom of organic disease. Confirmation by laboratory findings is desirable.

Cervical sympathetic syndrone, viz, unilateral narrowing of palpebral fissure, sunken eyeball, flattening of face, unequal pupils.

B. Mental defect or deficiency.—Look for defect in general information with reference to native environment, ability to learn, to reason, to calculate, to plan, to construct, to compare weights, sizes, etc.; defect in judgment, foresight, language, output of effort; suggestibility, untidiness, lack of personal cleanliness, anatomical stigmata of degeneration, muscular awkwardness. Consult psychometric findings. Get history of school and vocational career and disciplinary report.

C. Mental diseases.—A definite, corroborated history of a mental disease that required hospital treatment or observation serves as a cause for rejection in a recruit mentally normal at the time of examination. The circumstances should, however, be inquired into with great care. Few mental diseases present objective clinical signs, but their manifestations are none the less characteristic and dependable. All mental diseases are causes for rejection. In addition to the well-defined clinical types such as paresis, dementia præcox, etc., there are various combinations on psychological symptoms which render those who suffer from them unstable, unreliable in emergency, and subject to attacks of disabling mental illness from slight emotional causes.

General paralysis—Paresis.—Look for Argyll-Robertson pupils, facial tremor, speech defect in test phrases and in the slurring and distortion of words in conversation, writing defects consisting of omissions and distortion of words. Mood is apathetic or depressed or euphoric. Memory loss, discrepancies in relating facts of life. Knee-jerks may be plus, minus, or normal. In doubtful cases it is required that the Wassermann reaction in the blood be determined, and that the cerebrospinal fluid be examined as to Wassermann reaction, cellular, and globular content, etc.

Dementia præcox.—Look for indifference, apathy, withdrawal from environment, ideas of reference and persecution, feelings of the mind being tampered with and thoughts being controlled by hypnotic, spiritualistic, or other mysterious agencies, hallucinations of hearing, bodily hallucinations, frequently of electrical or sexual character, meaningless smiles; in general, a lack of balance between the emotional reaction and the present situation and a lack of connectedness and responsiveness in conversation. There may be sudden emotional or motor outbursts. Get history of family life and of school, vocational, and personal career.

Manic-depressive insanity.—Look for mild depression with or without feeling of inadequacy or mild maniacal states with exhilaration, talkativeness, and overactivity.

Psychoneuroses.—Look for hysterical stigmata, such as cutaneous anesthesias (especially hemianesthesia), contractions of the visual fields, etc., phobias, morbid doubts and fears, anxiety attacks, compulsions, hypochondriasis. Compare complaints with behavior and obtain history as to former nervous breakdowns and vocational career.

Psychopathic character.—Homosexual, grotesque liars, vagabonds. Superficially bright oftentimes. These individuals do not last out and never stay at any one thing long. Frequent military and civil offenders. Get history of personal career.

D. Chronic inebriety.—For alcoholism, look for suffused eyes, prominent superficial blood vessels of nose and cheek, flabby bloated face, red or pale purplish discoloration of mucous membrane or pharynx and soft palate; muscular tremor in the protruded tongue and extended fingers, tremulous hand writing, emotionalism, prevarication, suspicion, auditory or visual hallucinations, persecutory ideas.

For drug addiction look for pallor and dryness of skin. If taking drug, the attitude is that of flippancy and of mild exhilaration; if without it, it is cowardly and cringing. There are also, during period of withdrawal, restlessness, anxiety, and complaints of weakness, nausea and pains in stomach, back, and legs. Distortion of alæ nasi. Pupils contracted by morphine and dilated by cocaine. All habitual drug takers are liars. They do not drink as a rule and are inactive sexually. Morphine takers usually use needles and show white scars on thighs, arms, and trunk. Heroin takers, who constitute 90 per cent of all drug takers, rarely use the needle. They are mostly young men from the cities, often gangsters. They have a characteristic vocabulary and will talk much more freely about their habit if the examiner in his inquiries uses such words as "deck," "quill," "package," "an eighth," "blowers," "cokie," etc.

(*Cir. No. 22, Office of the Surgeon General, August 1, 1917.*)

Orthopedic Examination.

In the examination of large numbers of recruits there will be many cases arising which must be classified as "border line." They will require careful consideration, and it is important in reaching a decision to discover the attitude of the recruit. A man anxious to enlist will minimize the importance of an apparent disability. On the other hand, a man may attempt to avoid service, or to secure discharge for disability, by complaining of symptoms which, in the mind of the public, are disabling features. The attempt to avoid service may occur among drafted men who at their homes have claimed exemption without effect. Many will undoubtedly fortify their claims by certificates of physicians. It will, therefore, be necessary to consider each case with the greatest care and, whenever possible, radiographs should be taken to assist in making diagnoses.

In the examination of men already enlisted every effort will be made by examiners to retain in service those in whom remediable orthopedic abnormalities exist.

Major orthopedic conditions, due to structural changes, such as would impair the functions of joints, deformities from previous disease, extreme malpostures, with accompanying deformities, etc., should be regarded as disqualifying.

Minor abnormalities are frequently remediable. Among these are some forms of flat-foot; hammer-toe; callosities; corns, hard and soft; claw toes (contractures in dorsal flexion); overriding toes; "Morton's toe"; ingrowing nails; irregularities of the nails; bunions and hallux valgus.

In such cases, men already in the service should be referred to the orthopedic surgeon on duty for treatment. If there be no orthopedic surgeon at the station, the soldier will be transferred to the nearest cantonment, base, or general hospital for observation and treatment.

FOOT EXAMINATION.

The examination of the foot is the most important feature of the work demanded of the examiner. It should be remembered that civilian life does not always demand great foot efficiency, and that a person with a pathological foot, or other abnormalities, may perform his daily tasks without great difficulty. In the case of a soldier, however, it is of extreme importance that he be physically fit in every respect, and that no abnormalities be present which would prevent the performance of any part of his duty.

RELATION OF FOOT TO LEG.

Dorsal flexion.—If this is limited to 90° or less, it is a factor of potential weakness, and becomes important if associated with other abnormalities. This limitation (90°) is not of itself disabling; the condition is often remediable, but may be due to disease conditions in the ankle joint.

Plantar flexion.—Limitation is often due to disease in the ankle joint. In such a case it is a cause for rejection; if not from disease, and existing only to a moderate degree, it may be remediable.

Abduction and pronation are factors of importance in producing disability when (*a*) existing to such a degree that the weight-bearing line falls inside the line of support of the foot (the weight-bearing line is a perpendicular dropped from the crest of the tibia, passing through the interval between the second and third toes); (*b*) when accompanied by rigidity of the foot; (*c*) when accompanied by symptoms of strain; (*d*) when associated with marked deformities of the toes and pathological changes in the articulations, etc.

Eversion.—This is an abnormal posture when the angle between the feet is more than 30°; but it is not disqualifying unless much in excess of that, and accompanied by pronation, symptoms of strain, rigidity, hallux valgus, varicose veins, etc.

Inversion.—A slight degree is not disqualifying; but if associated with marked bowing of leg, or if shoes show that toes "interfere," this is a cause for rejection.

Rigidity of ankle joint.—Loss of flexibility in the direction of adduction and supination may be due to joint disease (arthritis, tuberculosis, etc.) or to the effect of long-continued foot strain, especially in the presence of infectious areas elsewhere in the body. In this case it is very likely to be associated with contraction or spasm of the peroneal group of muscles and is a cause for rejection.

FOOT.

Viewed from in front: A line drawn from the center of the patella over the crest of tibia, continued over the foot, should meet the interval between the second and third toes. Viewed from behind: A perpendicular dropped from the center of the popliteal space should pass through the middle of the heel. Deviations from these normal postures are causes for rejection when the displacement is marked and accompanied by other symptoms, such as pronation, strain, pain, tender points, etc. A slight degree of deviation, not accompanied by other symptons, is remediable.

Flaccidity indicates insufficient control by the abductors and supinators, therefore foot weakness and ligamentous strain, and is a cause for rejection.

Rigidity in the joints of the foot itself, when caused by a diseased condition (arthritis, tuberculosis, etc.), is a cause for rejection. On the other hand, moderate rigidity may be from other causes, and remediable.

Arches of the foot.—The longitudinal arch may be higher or lower than normal without affecting the efficiency of the foot. An excessively high arch, when considered alone, is more apt to be a factor in causing disability than a low arch. A low longitudinal arch is not of itself important when found in a foot otherwise practically normal in shape and flexibility. The disability often found in a "flat foot" is usually due more to the following than to the loss of the height of the arch: (*a*) Loss of dorsal flexion; (*b*) rigid metatarsal and subastragaloid joints; (*c*) rigid and deformed toes; (*d*) excessive hallux valgus; (*e*) hallux rigidus; (*f*) pronation; (*g*) pain and tenderness and a very prominent scaphoid. When any of these accompany "flat foot" it constitutes a cause for rejection. When in doubt as to a "flat foot" the applicant should be put through the following tests, each foot separately: Hopping backward and forward on toes; raising body on toes; jumping from chair landing on toes; raising body on toes from squatting, etc.

The transverse arch may be flattened in varying degree and associated with the following: (*a*) Prominence of the plantar surface of this region; (*b*) markedly diminished force of plantar flexion at the metatarsophalangeal joints; (*c*) rigidity of these joints in dorsal flexion (claw toes); (*d*) abnormal flaccidity of the forefoot and toes; (*e*) severe pain or tenderness; (*f*) large callosities on plantar surface; (*g*) arthritis. Obliteration of the transverse arch accompanied by any of these symptoms is disqualifying.

TOES.

Limitation of motion is found in connection with congenital deformities and contractures from acquired deformities.

The following conditions of the toes, when existing to a marked degree, are causes for rejection: Hallux valgus, hallux rigidus; bunions; hammer-toe; overriding toes; arthritis; excessive callosities. These conditions are to be appraised in the following manner:

(*a*) Hallux valgus; per se, is not disqualifying unless excessive and accompanied by symptoms.

(*b*) Hallux rigidus is disqualifying.

(*c*) Bunion, if slight, is not disqualifying; but if large, inflamed, and associated with marked hallux valgus, or rigidus, is a cause for rejection.

(*d*) Hammer toes.—One of these on a foot in not disqualifying but more than one should cause rejection, unless the recruit can be operated upon with success.

(*e*) Claw-toe (contracture in dorsal flexion), if existing in two or more toes on each foot to a marked degree, is disqualifying. If, however, these toes can be held in normal position easily with the application of a strip of adhesive plaster, the condition is not serious enough to cause rejection. In these cases examine carefully for obliteration in the transverse arch. This, if existing, usually produces a complex of symptoms which is disqualifying.

(*f*) Overriding toes, if excessive and numerous, are apt to cause blisters in marching and are disqualifying. If in a mild degree, these will tend to improve after wearing the Army shoe.

(*g*) Arthritis, unless very slight and localized, is disqualifying, and should suggest a similar condition in other joints.

(*h*) Callosities, if extensive and of long standing, covering most of the toes, or a greater part of the plantar surface of the forefoot, are disqualifying. There is apt to be deformity of the toes accompanying excessive corns. However, if the toes are normal, corns, per se, are not a cause for rejection, as they can be removed.

SYMPTOMS.

1. *Subjective.*—Should be related by the patient as far as possible without putting questions. These are not to be considered of great importance. Note the following: Pain upon use, after use, etc.; stiffness after rest; fatigue after use; symptoms in knees, thighs, hips, or lower spine.

2. *Objective.*—(*a*) Sluggish circulation—hyperidrosis, bromidrosis, edema.

(*b*) Exostoses on the dorsum or elsewhere.

(*c*) Awkward and inelastic gait—general bad posture.

(*d*) Weakness, displayed by tests of hopping on toes and by testing with the resisting hand.

(*e*) Stiffness of the joints.

(*f*) Tenderness, points of:

(1) At the metatarsophalangeal joints, especially the second, and in the presence of a plantar callosity at this point.

(2) At the tubercle of the scaphoid and the ligamentous attachments to the scaphoid.

(3) At the inner projection of the sustentaculum tali, below the internal malleolus, at the attachment of the tibiocalcaneal ligament (a symptom of supination weakness even in the absence of pronation deformity).

(4) At the anterior tubercle of the os calcis (anterior calcaneocuboid ligaments).

(5) At the tendons behind the external and internal malleoli.

(6) In the leg, the crest of the tibia, and the belly of the tibialis anticus muscle.

These symptoms should be weighed with care in each case in order to reach a conclusion as to their value.

BACK CONDITIONS.

DEVIATIONS FROM THE NORMAL CURVES OF THE BACK.

The normal curves of the spine may be decreased or increased. A decrease is usually of no especial significance. An increase in the curve assumes importance only when it exceeds a moderate degree and when considered in combination with other signs. Slight irregularities in the line of the spinous processes and slight prominence of a spinous process may occasionally be present from irregularities of development, and are not to be considered as abnormal; but marked deviations are usually an evidence of pathological processes.

VALUATION OF THE DEVIATIONS FROM THE NORMAL.

Surface form of the back.—Lack of the normal symmetry of the two sides of the back is usually an evidence of scoliosis, and demands a careful examination of the spine.

Examination should be made of the spine for lateral deviation of the column and for rotation. Lesser degrees of deviations of the spine, particularly when not associated with a considerable degree of rotation, are not a disabling condition. The more pronounced degrees and those associated with considerable change in the posture are to be considered as conditions of decided weakness and usually as disabling.

Movements of the spine.—The movements of the spine may be limited throughout its whole extent or be confined to a particular segment, and this limitation may be in one direction only or in all directions.

A localized stiffness in any one segment of the spine, even if slight, is to be regarded as of more significance than a general stiffness of the whole spine.

Sacroiliac articulations.—Demonstrable motion may be present abnormally in these articulations. This is determined in the standing position by grasping the ilia with both hands, the thumbs resting on the posterior spines, while the thighs are flexed alternately fully on the trunk. Marked demonstrable motion in these articulations, with pain, is disqualifying.

Movements of the hip affected by the spine.—Limitation of flexion of the leg on the trunk, with the knee fully extended and loss of hyperextension, may be unilateral or bilateral, and is of significance in this connection only when due to spasm of the hamstring muscles and of the psoas, respectively.

Lumbar curves.—The lumbar curve may show an increase from the normal by—

(*a*) An increase in the general depth of the curve.

(*b*) An increase in the angle of the lumbosacral junction.

These conditions are of importance as features of potential weakness, to be brought into prominence by the strain of added weight bearing, and are to be considered as an element of weakness. A sharp angle at the lumbosacral junction, associated with a sacrum placed more horizontally than the normal, is an element of greater weakness than is a considerable increase in the general lumbar curve. When either of these conditions is present in a moderate degree, and not attended by clinical symptoms of strain, it is not disabling. When associated with evidence of strain and with referred pain, or when existing in marked degree, this condition should be considered as disabling.

Dorsal curves.—An extreme degree of increase of dorsal curve resulting in malposition and flattened chest, with stiffness of the spine, is a feature of potential disability, and produces liability to strain when subjected to added weight bearing and work. It is disqualifying. The lesser degrees are remediable and should not be considered as disqualifying unless associated with other abnormalities.

Rigidity of the spine may be caused by muscular spasm, accompanying some abnormal condition existing at the time of examination, due either to strain or to actual disease, such as arthritis, infectious or toxic (not attended with destructive lesions), or tuberculosis (with destructive lesions). Any case of stiffness of the spine, particularly if attended with muscular spasm, should be examined with great care to determine its cause. When due to any pathological process it should be considered as disqualifying. When due to strain of the back (most frequently seen in the lumbar and lumbosacral regions), it should, of itself, be regarded as a temporary condition, and not disabling, except when accompanying some abnormal structural condition.

Evidence of old arthritis, resulting in rigidity, or of tuberculosis with deformity, even if slight, must be considered as distinctly disabling.

SCAPULA.

"Winged" scapulæ may accompany scoliosis or be an evidence of paralysis of the muscles of that region. Great prominence of the scapulæ should be cause for rejection, as this condition would interfere with carrying the pack. If the condition is due to carelessness of posture, however, it should not reject. Marked crepitation elicited upon free movement of the shoulder should be looked upon with suspicion, and requires careful investigation as to its exact cause.

(*Cir. No. 23, Office of the Surgeon General, August 13, 1917.*)

Examination for Tuberculosis.

1. The Surgeon General directs me to say that it is desired that all enlisted men of the National Army shall be examined for tuberculosis. The Regular Army, the civilians' training camps, and a portion of the National Guard have been or are being examined by boards of civilian experts. The number of such examiners available is not large enough to permit the extension of this scheme to include the National Army. The only course appears to be to rely upon the regular examiners of the Medical Reserve Corps. There are many excellent internists among these officers, but, on the other hand, it is to be expected that many others will not be competent to make such examinations satisfactorily. The problem is to arrange that the chests of the men examined shall be gone over by the competent men who can not only detect tuberculosis but also cardiovascular conditions incapacitating for service. The matter has been taken up with the officers commanding medical training camps, and the commanding officer of the Fort Benjamin Harrison and Fort Oglethorpe medical training camps report that instruction as to the elementary diagnosis of pulmonary tuberculosis has been given the medical officers under instruction. It is presumed that similar steps have been taken at Fort Riley. Of course, not all the examiners need to be employed in such examinations and the problem that presents itself at your camp is naturally to so arrange the examinations that the best men for the purpose are assigned to chest examina-

tions. Instructions as to the examinations in various specialties, including tuberculosis, are now in the printer's hands and it is expected that they will be sent to the camp surgeons before the examinations begin. There will be at least one cardiovascular specialist at each camp, the chief of the medical service at each camp hospital having been selected for proficiency in this branch among his other qualifications. Such officers are also competent to render opinions in doubtful cases of tuberculosis. It is intended to assign an expert in tuberculosis to each camp as a permanent member of the medical staff, but at present the need of examiners elsewhere is so pressing that none are available for that purpose. An official copy of an unnumbered circular of the War Department which has not as yet appeared in print, so far as this office is informed, is herewith inclosed for your information. Circular 20, S. G. O., which deals with the examination for tuberculosis and copies of a reprint in which the subject is more fully discussed have been supplied to the medical officers' training camps, and have no doubt been brought to the attention of the medical officers detailed as examiners. A copy of each is sent you under separate cover, and more will be supplied if you desire. It is requested that you inform the undersigned as to the examinations for tuberculosis, as to the apparent need for such examination, the success with which such examinations are being performed, etc. It is desired to render you all possible assistance in this matter. If there should be reason to doubt that the primary examinations have satisfactorily eliminated the tuberculosis cases, it may be necessary to send special boards of examiners to the National Army camps at a later time. It is therefore important that this office shall be informed promptly as to the need of the constitution of such boards, if such need shall become apparent.

(*Cir. Letter, Surgeon General's Office, August 27, 1917.*)

Neuropsychiatric Units.

1. In order that you may more fully understand the purpose of the building marked "Psychiatric" on the cantonment plans, the Surgeon General directs me to write you as follows:

2. Nervous and mental diseases are frequent among troops and present little interest to surgeons in general. As a rule, they incapacitate for military service, and mental cases especially are a great hindrance to the medical services. In the beginning of mental disease, especially, surgeons hesitate to make a definite diagnosis, with the result that there is delay in transfer or discharge and the patients are retained too long in the general medical service, where each one requires oftentimes the undivided attention of an orderly. The Surgeon General believes that the collecting of all nervous and mental cases in one ward, under the care of specialists, will greatly relieve the general work of the hospital, will hasten the recovery of mild cases, and will expedite the transfer or discharge of cases which are unfit for service. It was to carry out this arrangement that neurologists and psychiatrists have been ordered to your station.

3. The duties of the psychiatrists and neurologists, in addition to those of hospital internes, will be to make examinations in their specialties of all troops as per letters of special instructions.

4. When more than one neurologist or psychiatrist is assigned to a neuropsychiatric unit, the senior will have charge and, in addition to the regular reports, will make monthly reports (on special forms to be sent later) to the Surgeon General through you.

5. You are requested to cooperate to the end that this arrangement may be successful and that the neuropsychiatric units become established as special wards for nervous and mental diseases. An effort will be made to detail women nurses to each unit, one to have charge, the two others as day and night nurses, respectively. An effort will also be made to detail six enlisted men to each unit, five to serve as attendants and one as stenographer. There has been great difficulty in securing enough men who are experienced in these matters, and you are requested to assist in the assignment to the unit of drafted men who have had experience in nervous and mental diseases.

6. In addition to the regular equipment as supplied to base hospitals, the neuropsychiatric units will have special equipment of which a list is attached.

I. DIAGNOSTIC EQUIPMENT.

1 ophthalmoscope with electric battery attached.
2 pupil lights (pocket flashlights).
A/4468.......2 reflex hammers (triangular rubber hoods).
A/4832.......2 stethoscopes.

A/4800.......2 stethoscopes.
1 microscope, 2 objectives; oil-immersion lens and detachable mechanical stage and 2 eyepieces.
A/4044.......1 blood-pressure instrument (mercury manometer).
A/6100.......1 hand centrifuge (2 thimble types, 2 dozen tubes), 1 dozen plain glass tubes, 1 dozen graduated glass tubes.
B/9941–42 ...1 dozen lumber puncture needles, Quincke's type.
A/5906.......1 Fuchs-Rosenthal's counting chamber for spinal fluid.
2 white-blood counting pipettes for spinal fluid.
A/5930.......1 Zappert-Ewing blood counting chamber, ruled.
A/6968.......2 red-blood counting pipettes.
A/5974.......2 white-blood counting pipettes.
A/5690.......1 outfit for taking Wassermann blood specimens, MacRae's.
B/10815......1 salversan administration outfit.
6 cross slides, 3 by 1 inch.
10 boxes cover glasses, 22 by 22 mm., No. 1 thickness, 5 ounce.
1 dozen urine sedimentation glasses, cyl.
200 test tubes, 6 by ⅝ inch, gr.
A/5098.......2 urinometers.
2 alcohol lamps.
1 head mirror.

All to be obtained from Kny-Scheerer Co., New York.

PSYCHOLOGICAL TESTS.

1 No. 78002. Form board.
1 No. 79981. Imbecile tests (Knox).
1 No. 775340. Picture memory test.
1 No. 99022. Picture completion test.
1 No. 99031. Construction puzzle A (Healy).
1 No. 99041. Construction puzzle B (Healy).
1 No. 01061. Aussage test.
1 No. 99081. 500 learning test.
1 No. 77140. McCalliss test cards.
500 record blanks for scoring.
1 No. 78640. Material for Yerkes point scale.
No. 78630. 500 record blanks.
Material for Binet-Simon test (Stanford revision).

(*Cir. Letter, Surgeon General's Office, September 5, 1917.*)

Memorandum of Suggestions for Orthopedic Surgeons.

1. On arrival in camp you are to report in person to, first, the camp commander; and, second, the camp surgeon.

2. You are expected to thoroughly familiarize yourself with the plan of instruction and of examination furnished you, and to conduct your work in strict conformity with it, in order that the orthopedic work of the various camps be standardized.

3. As specialists in the various branches will be assigned to most of the camps to act in an advisory capacity, the number will probably be large; further, most of them will be, at least for the present, men untrained in Army rules and regulations. For the good of the general medical service, therefore, as well as for that of our special service, your attention is called to the following points:

(*a*) You should realize that while your own specialty naturally seems to you, and indeed is, of vital importance, yet it is necessarily only a detail in the work of the Army surgeon, who must first of all be thoroughly grounded in the general medical routine of the Army. The time allotted you for instruction is very little; yet, realizing the great importance of the preliminary general training, you should adapt yourself to the circumstances, and make every effort to condense your material into the most presentable form.

(*b*) You should at all times endeavor to conduct your work so that it will harmonize with the general plan and not conflict with arrangements made for the conduct of the general medical training and work of the camp. You should especially avoid the appearance of trying to encroach on the time allotted other branches.

(c) You must also remember that, though assigned for special duty in your accredited work as an orthopedic surgeon, you are nevertheless first of all an officer of the Medical Reserve Corps, and as such are expected to perform any and all duties assigned you by the local commanding officer.

4. Orthopedic surgeons are assigned as (a) supervising and (b) attending.

DUTIES OF SUPERVISING ORTHOPEDIC SURGEON.

(a) He should have supervision of all orthopedic work in the group of camps assigned him; he must visit them at regular intervals, as stated in his orders; and he will be held responsible for the proper performance of the work in his department.

(b) He should act as consultant in cases referred to him by the regimental or division surgeon and carry out or supervise all orthopedic treatment in cases referred to him.

(d) He should arrange for the orthopedic surgeon assigned to duty in the camp to examine the soldiers' feet at the time of regular semimonthly inspection.

(e) He should have supervision of the work of the orthopedic surgeon, examine cases referred by him, and arrange with him in regard to the courses of clinical instructions and the other orthopedic work of the camp.

(f) He is responsible to the Surgeon General and to the divison surgeon for the performance of his orthopedic duties at each camp, and shall make such reports as are required by the existing orders and regulations, stating the character and amount of the work of the services (both of his own and the orthopedic surgeon), and also any suggestions as to equipment and other matters, which may aid in perfecting the service rendered by the orthopedic surgeons. In this report should be stated his next place of destination, the time of expected arrival, and the estimated length of stay.

DUTIES OF ORTHOPEDIC SURGEON.

(a) He should assist the supervising orthopedic surgeon in all the duties above defined and act for him in his absence.

(b) He should be present at all lectures given by the supervising orthopedic surgeon, and have charge of and conduct the course of clinical instruction as arranged by the supervising orthopedic surgeon.

(c) He should attend to all the orthopedic duties of the camp as assigned to him by the supervising orthopedic surgeon or by the regimental or division surgeon.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Line of Duty.

The following rules will be observed in determining whether pulmonary tuberculosis has been contracted in line of duty:

A case of chronic tuberculosis in which the length of service is three months or less shall be considered to be not in the line of duty; cases of acute tuberculosis shall be considered to be in line of duty in all cases, irrespective of length of service. When action must be taken in cases in which the distinction between acute and chronic forms is not made, cases of three months' or longer service shall be considered to be in the line of duty; those of less than three months' service shall be considered to be not in line of duty, unless it be known that the patient has had some disease since enlistment, such as measles, which may be expected to reactivate tuberculosis, or unless there is a history of excessive fatigue or of exposure in line of duty calculated to break down the resistance of the individual.

(*Cir. No. 24, Surgeon General's Office, September 11, 1917.*)

Cardiovascular examinations.

1. It has been called to my attention that division surgeons in their instructions to regimental medical officers as to the preliminary examination of drafted men may have put a wrong interpretation upon paragraph 3 of Memorandum No. 3, S. G. O., August 23, 1917, which authorized them to accept for service all men who are mentally and physically qualified.

2. Memorandum No. 7, S. G. O., August 23, 1917, page 17 of instructions, specifies the standard for unconditional acceptance and requires reference to cardiovascular specialists of all men showing any abnormality of the cardiovascular system. The object of this is, first, to insure that the decision as to the significance of a discovered abnormality shall be determined by an expert; second, that records may be obtained of all men accepted with any deviations from the normal, which, when compared with their subsequent sick reports, will permit of a statistical study of the impor-

tance of the various abnormalities in the military service and give a sound basis for future recruiting standards. The whole future interest of the records lies in the accepted, not in the rejected, cases.

3. I would ask that you call this matter to the attention of your regimental officers conducting preliminary examinations and ask them to be guided thereby in the future.

(*Cir. Letter, Surgeon General's Office, September 27, 1917.*)

Tuberculosis Examinations.

1. The Surgeon General directs me to inform you that orders have been requested to send to Camp Dodge a board of tuberculosis examiners which consist of physicians who have made a study of that disease.

2. It is desired to have this board examine the conscripts at Camp Dodge with a view to determining the existence of tuberculosis. In case it will facilitate a primary examination of the conscripts as they come in, this board will be utilized to examine the hearts and lungs of the men. It is desired that this board examine at some time, as soon as possible after their arrival, all of the troops in the camp. These examinations are in the nature of an experiment to determine the facts in the case and to enable this office to know whether it is desired that examinations of this kind should be instituted in the other camps of the National Army. In addition to this board, orders have already been requested to have a Medical Reserve officer experienced in tuberculosis work assigned to your staff as the tuberculosis specialist. Cases of lung abnormalities discovered by the tuberculosis board are to be referred to the tuberculosis specialist for recommendations as to their disposal. As you perhaps know, we have in other National Army encampments a tuberculosis specialist and are depending upon the regimental medical officers for the detection of lung diseases. By comparing the number of cases referred by the tuberculosis board at Camp Dodge and those referred by the regimental medical officers to the tuberculosis specialist in other National Army encampments, we will be able to arrive at a conclusion as to the best method for eliminating tuberculosis cases.

3. It is requested that you give this board every assistance in your power, as they are perhaps not familiar with military procedure, and that you give them such advice as they may need for the proper conduct of their work. The regulations for the examination of the National Army will require some modification of the instructions given to the board of tuberculosis examiners in circular prepared in this office which has in mind the conditions existing in the National Guard encampments. This question as to the relation of the board of tuberculosis examiners to the tuberculosis specialist is one that it is desired that you coordinate and supervise.

(*Cir. Letter, Surgeon General's Office, October 4, 1917.*)

Mental Examinations.

1. The required mental examination of troops on duty with division located at your camp will be made by the psychiatrists on duty at your hospital, using such wards and equipment of the base hospital as are necessary. This examination will be held under the direction of the division surgeon.

(*Cir. Letter, Surgeon General's Office, October 17, 1917.*)

Recognition and Elimination of the Mentally Unfit and of Those Suffering from Nervous Disease.

1. The Surgeon General again invites your attention to his desire that you make every endeavor to recognize and eliminate all cases of mental disease, all mental defectives, and all cases of nervous disease. It is believed that no less than 10 per thousand of men now in service are unfit from one of the above-mentioned conditions.

2. To aid you, orders have been issued making the services of the neurologists and psychiatrists detailed to the base hospitals available for the examination of troops of the division in his specialty.

3. It is desired that you use every effort to arrange with the commanding officer for the inspection of each organization by the specialist medical officer at some time during the training period to discover those soldiers whose general attitude and appearance suggest the need of special neurologic and psychiatric examination. Each organization will be inspected, if possible, details of this inspection being left to you, but it is suggested that they may be made advantageously when organizations are gathered together for such general medical purposes as vaccination, inoculation,

physical inspection of various kinds, etc. But if special formations are necessary, you will endeavor to arrange them.

4. You will recommend to the commanding officer that general written instructions be issued confidentially to the officers, to the following effect:

(*a*) Officers commanding companies, troops, batteries, detachments, or other organizations will note each member of their commands for the purpose of forming an opinion as to whether they show evidences suggesting mental disease or defect or insufficient nervous stability. Organization commanders will require the same observation by their junior officers and by noncommissioned officers, who will be directed to report doubtful cases to them.

(*b*) Those having officers under their command should secure special examination of any officer who seems of doubtful mental integrity or nervous stability.

(*c*) Senior medical officers will require those under their command to be on the lookout for mental and nervous cases.

(*d*) Medical officers serving with regiments or other units, those holding daily "sick call," those making physical inspections of any kind, and ward surgeons will bear nervous and mental disease in mind and refer suspicious cases for expert examination.

(*e*) Officers commanding places where prisoners, garrison or general, are confined, summary court officers, judge advocates, and assistant judge advocates of courts-martial, and officers who act as council for enlisted men, will note the mentality of all cases before them and refer all doubtful cases for proper examination.

(*f*) The observations herein required should be made quietly and unobtrusively, so that, if possible, no officer or enlisted man shall know that his mental or nervous condition is under question. This is important.

5. The fact that troops are being mentally examined will be kept from becoming a matter of gossip, if possible.

6. You should require the specialist medical officer to make through you monthly reports to this office of the special work done. Forms 89, 90, and 91 have been prepared for this purpose. The printed copies of these forms will be sent to the cantonments by the field supply depot in a few days.

(*Cir. Letter, Surgeon General's Office, October 18, 1917.*)

Cardiovascular Examinations.

1. The board of tuberculosis examiners now on duty at Camp Dodge has been instructed to examine hearts as well as lungs.

2. Since it is probable that some organic heart lesions were overlooked in the original preliminary examinations at the cantonments, it is the purpose of this second examination to detect and eliminate from the service, men thus affected. It is not intended that cases already passed by the cardiovascular specialist should be reviewed.

3. It is therefore requested that you appoint a disability board, made up of the chief of medical service, base hospital, the assistant in charge of cardiovascular cases, with the cardiovascular examiner during his stay, another competent officer thereafter, and that you direct the tuberculosis board to refer to this board all cases thought to demand discharge because of organic disease of heart or vessels and not previously accepted for service by the cardiovascular specialist.

4. It is requested that this disability board, upon the completion of its work, forward to this office, through official channels, report in the same form as that of the cardiovascular examiner.

(*Cir. Letter, Surgeon General's Office, October 23, 1917.*)

Cardiovascular Examinations.

1. With a view to the proper disposition of certain drafted men whose physical qualifications may be in doubt under the present requirements, you are directed to inform medical examiners that they may accept for general military service recruits showing loud systolic murmurs audible at the apex and in the left back, if unassociated with any definite enlargement of the heart, with snapping first sound or accentuation of the pulmonic second sound, in whom the response to exercise is normal, but the actual physical signs found present will be entered upon the record. (See p. 20, Instructions for the Physical Examination of Drafted Men, S. G. O.; Circular 21, S. G. O., p. 4, last paragraph.)

2. Copies of this letter are inclosed for distribution to examiners.

(*Cir. Letter, Surgeon General's Office, October 25, 1917.*)

Malingering.

1. The Surgeon General wishes to be put in possession, as soon as possible, of information concerning malingering as it has occurred during the present mobilization, in order that this information may be assembled and made available to all medical officers.

2. To meet this, you are requested, within a week of the receipt of this letter, to submit to this office, attention of Major Bailey, some statement as to the various types of malingering that have come to your notice, either through your own observation or through the observations of the officers under you.

3. The supposed reasons for malingering, viz, to obtain or avoid service, to obtain or avoid change of assignment, etc., should be stated.

4. The various types should be kept separate, viz, traumatic (self-inflicted wounds), medical, nervous and mental, special senses, etc. Also it should be stated whether the various conditions are wholly feigned or are exaggerations of actual conditions. Religious and other objections which interfere with military service should be mentioned.

5. Photographs of conditions which can be graphically portrayed are requested.

6. It is suggested that this information may be obtained most fully and profitably if you require the medical officers under you to submit brief statements of their individual experience, with their views, histories of individual cases, ratio of different types, etc.

7. This information should be forwarded as soon as possible to this office. It need not be put in systematic form; that will be done here.

(*Cir. Letter, Surgeon General's Office, December 6, 1917.*)

Instructions for Physical Examinations.

Under authority Adjutant General's Office April 17, 1918, the following instructions will govern:

The physical examination of all drafted men on their arrival at camps, cantonments, recruit depots, and other stations will be made and completed under the direction of the division surgeon or other senior surgeon of the command with the least practicable delay after their arrival. Except in doubtful or deferred cases, the examination of any individual drafted man should be completed on one day by a special examining board designated by the division surgeon, consisting of medical officers, including all necessary specialists. This single examination will take the place of the preliminary and final examinations previously prescribed by this office. Smallpox vaccination and the first dose of triple vaccine will be administered and all required blank forms, including identification records, will be completed on the day of the examination.

(*Telegraphic instructions to all division and camp surgeons, surgeons of recruit depots, and depot posts, Surgeon General's Office, April 29, 1918.*)

Method of Examining Drafted Men at Camp Lee, Va.

The following method of examining drafted men has been found very effective at Camp Lee, Va. It is desired that this plan, or a similar plan, be put into effect with a view to accomplishing the prompt examination of all drafted men (including the special examinations) at a single examination, completed on one day, except in the case of doubtful and deferred cases. At small stations the method will necessarily have to be modified according to the available medical personnel and equipment. Attention is invited to telegram, this office, dated April 29, 1918, modifying previous instructions which prescribed a preliminary and a final examination.

The problem of grouping together a number of specialists for the examination of a large body of drafted men is here treated and has been worked out along lines of efficiency and accuracy, such as are supposed to be used in a well-organized workshop or factory. Every effort has been made from time to time to improve efficiency and eliminate all unnecessary and lost motion and effort. Specialists who at first glance are overwhelmed with the immensity of the problem of examining 600 men in one day soon learn that by leaving out nonessentials the problem becomes feasible, and they do not feel that they are being pushed for time to the detriment of their work.

ARRIVAL IN CAMP.

A clerk with typewriter is posted in the little house beside a spur of the North Western Railroad used as a recruit receiving bureau, to make a correct list of men by local boards as they arrive, thus keeping in touch with the men and the personnel officer from the start. The number of the building in which each group is housed is written on each list in order that the work for the next day can be mapped out. After the men have a bath of warm water and soap, a group comprising a definite number of local boards can be promptly secured for examination at the set hour next morning. The local board Forms 1010 and 1029, etc., corresponding to this list, are set aside by the mustering officer, and confusion and delay are avoided. Another barracks building near by is set aside for observation cases and rejected cases only.

GENERAL SCHEME AND LOCATION OF BARRACKS USED FOR EXAMINATION AND OBSERVATION OF MEN.

The examination and personnel officers' rooms are in the same building; a standard Infantry barracks with a capacity for 150 men, located in the midst of the other barracks, used to house most of the drafted men. In the examination room wire between posts is used to separate the recruits from the space used by clerks and attendants and to keep the men in line. Having to deal often with men who do not speak our language, it is well to take it for granted that the recruits will keep in line only when it is next to impossible for them to get out of it.

SYSTEM OF ORGANIZATION, PERSONNEL, AND PROCEDURE.

The medical examiners and their clerks are arranged in specialized groups, and the chief medical examiner acts as general manager.

PERSONNEL OF GROUPS OR STATIONS.

1. Receiving men and distributing local board papers; responsibilities for clothing and effects. One medical officer; four clerks, enlisted; and one orderly, enlisted.
2. Marking men with indelible pencil. One clerk, enlisted.
3. Filling out forms, taking signatures, etc., on various forms. One medical officer and six clerks, enlisted.
4. Height, weight, and chest expansion. Two clerks, enlisted.
5. Finger prints, scars, and marks. Four finger print men, enlisted; two scar and mark men, enlisted.
6. Skin and general medical examination. One medical officer and two clerks, enlisted.
7. General surgical examination. One medical officer and six clerks, enlisted.
8. Dental examination. One dental officer and two clerks, enlisted.
9. Orthopedic examination. Three medical officers; six clerks, enlisted; and two extra clerks, enlisted, for measuring feet.
10. Eye examination. Two medical officers and two clerks, enlisted.
11. Ear, nose and throat examination. One medical officer and two clerks, enlisted.
12. Cardiovascular examination. Four medical officers and two clerks, enlisted.
13. Tuberculosis examination. Ten medical officers (five for forenoon and five for afternoon); one clerk, enlisted.
14. Neuropsychiatric examination. Three medical officers and two clerks, enlisted.
15. Smallpox and triple vaccination. Two medical officers; one clerk, enlisted; and two orderlies, enlisted.
16. Reviewing and signing papers and making numerical list. Two medical officers and five clerks, enlisted.

General management.—One medical officer; chief medical examiner; one chief clerk (sergeant); one typist, enlisted; two floor orderlies, enlisted.

Two orderlies are used as traffic managers, one on each floor. First sergeant in chief medical examiner's office has general supervision of clerks and supplies and acts as chief clerk.

PROCEDURE.

Station 1.—Recruits enter building as names are called from the prepared list; they strip to the skin and form in single line ready to receive local board Forms 1010 and 1029, P. M. G. O. One medical officer is responsible for receiving men in the examination room; for handing out local board papers, Forms 1010 and 1029, P. M. G. O.; and for the correction of names on same. An orderly is responsible to him for the proper arrangement of men's clothing and effects. Two clerks assist in the correction and distribution of local board papers and supply duplicates.

Station 2.—The men are consecutively numbered on the chest with indelible pencil with the numbers corresponding to those on Form 88, M. D., which are then given to the recruit.

Station 3.—The name of the recruit is printed at the top of Forms 260, A. G. O.; 88, M. D.; and 81, M. D.; and the other necessary data recorded. These forms are now added to those already in the possession of the recruit. Great care must be exercised in getting the signature correct on Form 260, A. G. O., and in having the name correctly printed, surname first, in the proper space.

Station 4.—Height, weight, chest expansion are taken and recorded on Forms 1010 and 88. Comparison of names on all forms. Hands of recruits are cleansed with coal oil and towel, preparatory to finger prints.

Station 5.—Finger prints are taken by four men with four outfits; scars and marks recorded by two clerks.

Station 6.—This is the beginning of the regular physical examination and is in charge of skin specialist. Inspection is made for skin diseases, exanthems, and for general medical conditions not included in the other specialties. "Qualifications card" is added for the record of cases recommended for limited or special service and the recommendation is noted under "Remarks" at the bottom of the card; also the disability is recorded on this card in plain everyday terms that can be understood by the personnel officer in order to assist him in placing such men in some branch of the service fitted to their mental and physical status.

Station 7.—General surgical examination, including hernia, hemorrhoids, varicocele, varicose veins, and venereal diseases. Recruits are lined up in groups of six, a short explanation is made to the recruit concerning the method of examination and the advisability of telling the truth in regard to venereal diseases. Papers are laid on the table and the routine examination is then quickly gone through.

Station 8.—Dental examination: Particular attention is paid to cases requiring removal of roots with foci of infection.

Station 9.—Orthopedic examination: After examination of entire body has been made for gross abnormalities, the recruit stands erect with feet slightly separated and parallel. A routine method of procedure has been adopted to demonstrate the extent of motion in all joints about as follows: Active motion, lower extremities: Rise on toes, separate legs, flex each thigh, with knee flexed. Upper extremities: Arms overhead, flex elbows, rotate wrists, bend and spread fingers. Spinal column: Stand erect, feet together, bend forward as far as possible. Passive motion: Recruit sits down while feet are examined for minor defects, for length of heel tendon, etc. For more extensive examination the prone position. Cases needing X ray are held for observation at base hospital. At this point service record is added to man's papers. Size of uniform shoe is noted, shoe size being obtained from measuring feet. Also orthopedic recommendation made for shoe alterations.

Station 10.—Eye examination: (*a*) Inspection, size of pupils, cornea, eversion of lids, old injuries of ball and lids; (*b*) vision, ordinary card test; (*c*) cases in which vision does not come up to requirements or in which there is a question of malingering are given examination in a dark room or sent to base hospital for refraction. All cases with vision less than 20/20 are given ophthalmoscopic examination. (The dark room is a small room with window darkened by hanging army blankets over window.)

Station 11.—Ear, nose, and throat examinations are made in darkened room; tuning fork and voice test for hearing; special attention to middle ear and tonsil examination. Malingering tested by surprise commands.

Station 12.—Cardiovascular examination: Blood pressures are first taken, followed by examinations in groups of five men each. One minute per group can be saved by this method as compared to examining each man singly. For the daily quota of 600 this minute saved amounts to two hours. The apparently normal are separated from the gross lesions by inspection and palpation. These two classes are examined further and pathological cases sent to chief of department, such cases usually being discussed by all members of the board. Heart muscle efficiency is tested under exercise. Cases requiring fluoroscopic examination, notably aortic lesions, and those for more extended observation are sent to base hospital.

Station 13.—The examination for lung defects is made by the tuberculosis examiners stationed along one side of the room. When no lung defect is found, the recruit is given a ticket by the examiner, on receipt of which the clerk stamps the recruit's papers and service record as having been examined and passed by the tuberculosis board. When a doubtful or positive case is encountered, the first examiner asks the examiner nearest him to examine the recruit's chest, and if the man is to be rejected he is gone over by the chief tuberculosis examiner. A doubtful case, in which the diagnosis can not be determined upon, is marked for observation and is gone over by the board a few days later. The method for examination for tuberculosis, as given in Circular 20, W. D., is followed as the routine procedure.

Station 14.—Neuropyschiatric examination: The examination of 75 recruits per hour for neuropschychiatric states presents peculiar difficulties and is overcome by alertness in successfully separating the apparently normal from the abnormal. Observation of the men as they pass through the chest examination and again form in line, scanning of Form 88 for records of all previous examinations, a question or two of his neighbor who probably knew him or observed him on the way to camp, a quick observation for the ordinary stigmata, these are more or less superficial but are sufficient to enable the examiner to separate the suspicious cases. Ability to recognize normal types and reactions is a most important attribute of the special examiner in this department. The suspicious cases are then given the more careful routine examinations commonly used for determination of such cases.

Station 15.—Smallpox and triple vaccination: Attendant prepares arm by washing with soap and water for smallpox vaccination. Two parallel scratches 1 inch apart are made at insertion of deltoid. Tincture of iodine is applied before injecting triple vaccine. Care is exercised to avoid injection into the muscle. Needles are sterilized by boiling or by phenol and alcohol.

Station 16.—Correction and signing of papers: Forms 1010, P. M G. O.; 88, M. D., and 260 A. G. O., are reviewed and signed. All names are entered on the "numerical list" and marked, accepted (A.), rejected (R.), observation (Obs.). Accepted men are sent on with papers to mustering officer. Papers of observation and rejected cases are held at this station. Men are put in charge of an orderly, and, after dressing, are tagged with a special tag giving name and marked rejection or observation. The latter cases are collected in small groups by noncommissioned officers and sent to the "observation barracks," where they are held until finally disposed of after further investigation by laboratory or other methods.

Chief medical examiner's office.—All Forms 1010, P. M. G. O., are signed by chief medical examiner on second indorsement. Papers held for rejection, observation, or limited service are always signed by special examiner on first indorsement. A filing case is so arranged that each medical examiner has papers of his cases filed under his specialty, "rejections" on one side of the case and "observations" on the other. These are arranged so that the examiner can have access to them at his own convenience. Observation cases are sent each morning with a noncommissioned officer by ambulance to base hospital for X ray, Wassermann, or other laboratory tests, and disposed of as promptly as possible. A clearance sheet is made out each evening giving, first, rejection list, surname, name of local board, and correct cause for rejection (this list is handed to personnel officer promptly and contains all the data necessary to fill out Forms 1029 A and B for report to A. G. O. and local board); second, list of cases under observation, showing specialty, for guidance of special examiners; third, number accepted for the day, number rejected, and number under observation; percentage rejections are tabulated at bottom of sheet. Forms 88, M. D., are filed numerically until the end of that particular draft. Vaccination register is sent on with service record. Forms 1010, P. M. G. O., of rejected cases, after proper indorsement, are forwarded to the commanding general.

It was found at Camp Lee that 600 men could be readily examined in an eight-hour day. For handling larger numbers either the arrangements shown above should be duplicated or certain stations may be given a larger personnel to suit local conditions and personal capabilities.

(*Memo. to division surgeons, camp surgeons, surgeons at recruit depots, depot vosts and department surgeons, Surgeon General's Office, May 1, 1918.*)

Specific Disease to be Mentioned on Rejection Form.

1. Attention is invited to the fact that in all cases of rejection of registrants and return of these men to local boards, the specific name of the disease or condition causing rejection should be indicated on Forms 1029 A and B, P. M. G. O. The expression "physically unfit," "physically disabled," or other terms which carry no specific medical information should not be used.

(*Cir. Memo., Surgeon General's Office, June 7, 1918.*)

Cardiovascular Examinations.

1. The returns of the cardiovascular examinations on the Forms B 1, 2, 3, and 4, resulting from examinations of the draft and other increments, have been characterized, in many instances, by discrepancies between the summary on Form B–2 and the grand totals on Form B–3.

Furthermore, there have been many instances where the place of examination or date, or both, were omitted on one or more of the forms.

Again, in calculating the percentage incidence of acceptances and rejections, etc. (Form B–2), there have been errors in placing the decimal point, so that, for example, 0.009 has been recorded when 0.9 per cent was meant.

2. As the data on Forms B–2 and B–3 are intended not only for immediate but also for future reference, it is essential that great care be exercised in making them out. Officers making out returns for cardiovascular examinations are, therefore, instructed to observe the following precautions.

(*a*) Returns on Forms B–1 of individual examinations of any given group of men should be accompanied by one copy of Form B–2 and one copy of Form B–3, which forms should include the summary for such entire group. The figures on these forms should tally.

(*b*) In making returns comprising examinations of widely different groups of men, such as draft increments and subjects for reexamination, the individual returns for such different groups should be attached together and accompanied, each group respectively, by copies of Form B–2 and B–3, properly filled out.

(*c*) It should be clearly stated whether the figures refer to an incoming draft, in which a low percentage of rejections is to be expected, or to some other group, such as cases referred for reexamination, in which a high percentage of rejections is to be expected.

(*d*) Changes in the conditions under which the examinations of troops are conducted make it unnecessary to fill out both Forms B–2 and B–4, and the application of paragraph 6 of Circular of Directions, A–465, will be suspended in so far as it relates to Form B–4.

Form B–2 will, therefore, be used for the summary of all examinations conducted.

(*e*) The date and place of examination should be entered on each blank returned and all figures, such as percentages and totals, should be checked up and correctly expressed.

(*Memo. to the cardiovascular boards and cardiovascular examiners, Surgeon General's Office, June 24, 1918.*)

Monthly Report Physical Examinations.

1. All instruction from this office requiring that reports regarding the examination of drafted men be sent to this office, or to any of the divisions or sections in this office, by special examiners (formerly designated as tuberculosis boards, cardiovascular boards, and neuropyschiatric boards), or by other members of the special examining board for drafted men provided for in telegram this office, April 29, 1918, are hereby revoked. No reports regarding examination of drafted men will be made to this office except the monthly report of the camp surgeon called for below. In this connection attention is invited to letter, A. G. O., August 22, 1918 (342.15, Misc. Div.), copy attached.

2. The camp surgeon will render monthly a report of the examination of drafted men made during the month. This report in duplicate will be mailed not later than the 10th of the following month to the Surgeon General, attention Division of Sanitation. The report will contain the information indicated in the attached form of report and may, in addition, transmit, as exhibits, any other data which the camp surgeon may desire to submit.

3. All previous instructions from this office requiring that routine or special professional reports on any matter from any specialist assigned to a camp be sent to this office, or to the respective divisions or sections of this office, are hereby revoked. The phraseology "assigned to a camp" is not intended to include officers stationed at the base hospital pertaining to the camp in question.

AUGUST 22, 1918.

From: The Adjutant General of the Army.
To: All department commanders, the commanding general of all divisions and ports of embarkation, and the commanding officers of all camps, recruit depots, excepted places.
Subject: Special examiners.

The method of examining drafted men by means of a single board of examiners containing all necessary specialists, as prescribed by telegram, S. G. O., April 29, 1918, and by letter, A. G. O., August 2, 1918, has obviated necessity for the boards of tuberculosis examiners, boards of cardiovascular examiners, and boards of psychiatric examiners. These three boards are hereby dissolved. All medical officers ordered to report to commanding officers for duty on such boards are hereby assigned to duty at their present stations as tuberculosis examiners, cardiovascular examiners, and neuropyschiatric examiners, respectively.

Such officers and all other officers assigned to camps as special examiners will be detailed by local authority for duty on the special examining boards designated for the examination of drafted men, and may also be assigned for such other duties, particularly instruction work in their specialties, as will not conflict with the primary function of performing the respective special examinations of drafted men for which they are designated in the special orders assigning them to station.

By order of the Secretary of War:

(Signed) ROY A. HILL,
Adjutant General.

Monthly report of examination of drafted men at .... (*place and date*), *month ending* ...., *19*...

....
(Place and date.)

I.

Total drafted men examined	
Number of white men examined	
Number of colored men examined	
Number of other races examined	

II.

	Number.	Percentage of total men examined.
Accepted for general military service		
Accepted for special and limited military service		
Rejected		

III.

	Number.	Percentage of total accepted men of specified race.
Total number with venereal disease, white		
Total number with venereal disease, colored		

CLASSIFICATION OF CAUSES OF REJECTION OF REGISTRANTS AND OF DEFECTS WHICH WERE THE BASIS OF ACCEPTING REGISTRANTS FOR SPECIAL AND LIMITED MILITARY SERVICE ONLY.

	Number rejected.	Number accepted for special and limited military service.
Eyes:		
Astigmatism		
Myopia		
Hyperopia		
Other errors of refraction		
Trachoma		
Other conditions		
Ear, nose, and throat:		
Otitis media		
Defective hearing		
Other conditions		
Cardiovascular:		
Valvular heart disease		
Diseases of arteries		
Other conditions		
Neuropsychiatric:		
Epilepsy		
Exophthalmic goiter		
Mental deficiency		
Other conditions		
Tuberculosis:		
Pulmonary		
Other types		
Orthopedic:		
Pes planus		
Other conditions		
General surgical and skin:		
Hemorrhoids		
Hernia		
Varicose veins		
Skin diseases		
Other conditions		
Dental:		
Defective or deficient teeth		
Pyorrhea		
Other conditions		
Venereal:		
Syphilis		
Gonorrhea		
Chancroid		
Developmental:		
Under weight		
Under height		
Defective physical development		
Other causes		
Miscellaneous causes		
Total		

V.

(*a*) Scheme of organization of examining board. (Acting as one or more teams? If no change since last report, so state.)

(*b*) Name and efficiency of chief medical examiner.

(*c*) Number of drafted men examined each day.

(*d*) Character and adequacy of examining rooms and equipment.

(*e*) Recommendations for improvement of service.

VI.

NOMINAL LIST OF EXAMINERS CONSTITUTING EXAMINING BOARD ON LAST DAY OF MONTH (SPECIAL EXAMINERS TO BE INDICATED BY "S" BEFORE THE SURNAME).

Surname.	Christian name.	Specialty.	Date of joining board.

VII.

NOMINAL LIST OF EXAMINERS RELIEVED FROM DUTY WITH THE BOARD DURING THE MONTH (SPECIAL EXAMINERS TO BE INDICATED BY "S" BEFORE SURNAME).

Surname.	Christian name.	Specialty.	Date of relief from board.

....

.... *Medical Corps,*
Camp Surgeon.

(*Cir. Memo., Surgeon General's Office, September 21, 1918.*)

Instructions for Physical Examinations at Students' Army Training Corps.

The following is furnished for your information and guidance:

1. There has been forwarded to the surgeon of each unit a supply of Medical Department and War Department forms necessary for the record of physical examination of inducted men. Some of the other Medical Department forms more commonly used, as those for the report of sick and wounded, have also been sent. The Adjutant General has been requested to furnish a copy of the Manual for the Medical Department and Army Regulations. Whenever other blank forms are required, or when an additional supply of those already furnished is desired, they should be requisitioned for on Form 37, M. D. In this connection see paragraph 961, M. M. D.

2. Supplies of smallpox vaccine and of triple-lipo-vaccine for protection against typhoid and paratyphoid, sufficient for immediate needs, are being shipped to the surgeon of each unit. Existing orders require that every student be given triple-typhoid vaccine and vaccinated against smallpox immediately after acceptance for service. One dose of lipo-vaccine takes the place of the three doses of the triple-typhoid formerly required. Care must be taken to inject the vaccine into the subcutaneous tissues and not into a muscle or vein. Typhoid vaccine should not be administered to anyone who is sick or has fever. The dose is 1 c. c. Information by letter should be furnished the company commander regarding all typhoid and smallpox vaccinations, in order that he may enter the facts on the service record of the individual. If the first vaccination against smallpox be not successful, it must be repeated, and the record will so state. One successful or two unsuccessful vaccinations against smallpox are required. Use Form 81, M. D., for recording all vaccinations. These cards are a part of the surgeon's official records and should remain at the dispensary. (See pars. 187, 188, and 193, M. M. D.)

3. Steps have been taken to have fingerprints made by an experienced enlisted man sent out by the department commander in each territorial department. This procedure, it is believed, will give better results than to have each unit do this work, as considerable experience is necessary to obtain satisfactory results. The surgeon should, however, if possible, familiarize himself with the method of taking fingerprints, so that in the event it becomes necessary to do so, he could instruct one of his assistants.

4. The record of physical examination on Form 1010, P. M. G. O., should be made on the third page in the space for "Physical examination at place of mobilization." On the first page of this form a record should be made (in the space "Statement of person examined") of the statement of the registrant, which should be signed by him, unless this record has already been completed by a local board. In grouping registrants under Groups A, B, C, and D, omit all except the one which applies. Special Regulations 65, A. G. O., is the standard for acceptance and rejection and grouping of registrants.

These regulations, especially section 128½, should be studied very carefully by the medical examiners, whose efficiency will be judged to a great extent by the results shown in the first physical examination. A complete physical examination of each man must be made and fully recorded under each heading on Form 1010, P. M. G. O., regardless of whether or not a defect is noted. When under any itemized heading no defect is found, it is customary to enter "normal," "negative," or "none," as the case may be.

The commanding officer of your unit should furnish you with a copy of these regulations as in the case of all forms and regulations not pertaining to Medical Department.

5. If after trying out in physical drill a man who has been accepted for full military service it is found that he has certain defects, as, for example, serious foot or joint defects or serious cardiovascular disease, it will show clearly that the preliminary examination was not thorough or that proper judgment was not exercised in interpreting the findings.

The ability and judgment of the medical examiner will be demonstrated by the after-results in the case of accepted men. The standards for classification into accepted, rejected, remedial, and limited service are very carefully explained in Special Regulations 65, and there can be no excuse for ignorance or disregard of them.

6. Before sending in your monthly report of sick and wounded, make a very careful study of the Manual for the Medical Department, paragraphs 427 to 460, inclusive. Attention is also called to the necessity of being familiar with regulations regarding infectious diseases, including venereals. Read paragraphs 184 to 201, inclusive, M. M. D. and Special Regulations No. 28, A. G. O. Also familiarize yourself with Army Regulations, beginning on page 282 so far as pertains to the Medical Department.

7. This office will detail medical enlisted personnel to the various units as follows, if needed and asked for:

Colleges under 500 population, none.
Over 500 and under 1,000, 1 sergeant, 2 privates.
Over 1,000 and under 2,000, 1 sergeant first class, 5 privates.
Over 2,0000, 1 sergeant first class, 1 sergeant, 6 privates.

Effort will be made to include in each detachment a pharmacist and a clerk. Surgeons at units having under 500 population will have to depend on details from the student body for help as it is impracticable to furnish enlisted men of the Medical Department to these small units at the present time.

8. Information will be furnished later, as soon as a policy is adopted, in regard to hospital accommodations and supplies. Until further notice, however, emergency medical supplies that are urgently needed to save life and prevent suffering may be purchased locally in accordance with paragraph 1476, Army Regulations, and vouchers submitted to this office for payment on Form 330A, War Department.

9. At each unit an office and dispensary should be established to be used for sick-call purposes and treatment of minor ambulant cases only. Units not having a dispensary already in operation will take steps to establish one at once. The necessary equipment and supplies for same will be purchased locally. Submit first to this office a list of what you need, stating local cost. If price is satisfactory, authority to purchase will be granted.

10. For the present, cases requiring hospital care will be treated at the college hospital, or a near-by civil hospital, as local conditions demand. If a military hospital is available, its facilities should, of course, be utilized. It is not the present policy of the War Department to erect hospi-

tals at Students' Army Training Corps units. College and civil hospitals will be used as far as possible. These hospitals will be reimbursed on a per diem basis at a reasonable rate by the Medical Department. Vouchers covering hospital care should be submitted on Form 355, War Department.

11. The medical officer or contract surgeon of the unit is expected to render all necessary professional services free of charge to members of his unit whether located in the college infirmary or a civil hospital. (See Army Regulations 1473.) Fees for consultation are forbidden by paragraph 1476, Army Regulations.

12. Surgeons at various Students' Army Training Corps units may correspond direct with this office on subjects purely of a medical nature and matters in relation to which the commanding officer can have no knowledge and over which he is not expected to exercise control. All other communications should be sent through the unit commanding officer. Do not send any communications through the department surgeon. (See Army Regulations 783–784.)

(*Cir. Memo. from the Surgeon General, October 22, 1918.*)

Physical Examination on Separation from Service.

1. A thorough and complete physical examination will be made by one or more medical officers of the Army in the case of each officer and enlisted man, immediately preceding separation from service in the United States Army through muster out, resignation, dismissal, or discharge other than upon surgeon's certificate of disability. Circular 73, already issued by The Adjutant General of the Army, covers the general plan of the examination, but it is considered necessary that certain matters be treated in greater detail than is given in published instructions

2. The existing machinery (examining boards) for the physical examination of registrants in camps and cantonments will be utilized, where available, in making physical examinations prior to separation from the service by muster out, resignation, or discharge. In the physical examination of registrants preceding their induction the object of the physical examination has been to determine whether or not the registrant is physically fit for service. In the examination of officers and soldiers preceding their separation from the service, the primary object is to determine whether or not any physical or mental defects or disabilities exist as the result of military service, and, in addition, to make a judicial estimate, in cases where a defect or disability has been determined by the examining board, as to the degree of disability resulting from such defect or defects, having special reference to the individual's occupation. It will be seen, therefore, that the board for physical examination prior to muster out combines the functions of the examining board for registrants with those of the S. C. D. board.

3. In considering physical examinations before separation from the service, as already indicated, distinction must be made between the objects aimed at in examining registrants about to be inducted into the military service and those desired when soldiers are about to be separated from the United States Army. In the former case the problem is a medicomilitary one, it being necessary to secure men capable of performing arduous military duties. In the latter instance the problem is a medicooccupational one, the problem being to estimate and seek to form an opinion regarding the ability of the man to resume his former occupation. If occupational ability is found to exist in a lessened degree, and the cause thereof was incurred in line of duty, the United States Government is responsible and must provide compensation commensurate with the decrease in the earning power of the individual.

4. To insure justice to the individual officer or soldier and to protect the interests of the Government, it can not be too strongly emphasized that every effort must be made to secure most thorough and complete physical examinations, together with accurate records thereof. The provisions of the war risk insurance act are far-reaching. That reliable and sufficient data may be available for the proper adjudication of claims incident to military service, it is essential that the War Risk Bureau be provided an exact statement of the physical or mental deterioration, if any, of each officer and soldier as found at the date of separation from the service; also the degree of disability based upon earning capacity when the deterioration is the result of military service. To this end it is of great importance that care be exercised in recording all discoverable defects, whether or not such defects are claimed by the officer or soldier in his signed statement. The "degree of disability" will be recorded on a percentage basis indicating the estimated decrease in earning capacity of the individual examined in view of his occupation as reported on page 1 of Form 395–1 or 135–3, A. G. O.

5. In conducting physical examinations prior to separation from the service, the routine procedure of physical examination will ordinarily be that of examining boards in the examination of registrants. Examining teams will be organized, each with the necessary specialists and operating under the immediate supervision of a principal medical examiner. The principal medical examiner will sign the medical examination certificate covering the results of all examinations made by the other examiners assigned to his particular team. It is suggested that an informal card be adopted upon which will be noted and authenticated the findings of each examiner as the officer or soldier passes from one examiner to another. In addition to this notation, should a disability or defect be discovered in the particular organ or system under examination, the degree, in percentage, of such disability should be noted by the examiner discovering it. The degree of disability indicated will be but an expression of the opinion of the medical officer responsible for it. It will, however, be the result of the physical findings and the estimated decrease in the man's earning capacity, based upon his pre-war occupation. This informal card, with the notations made as described above, should be passed from one examiner to another until, accompanying the officer or soldier, it finally reaches the principal medical examiner. The action of that officer will be determined by the data noted on the card, his own personal examination, and a consideration of the man's decreased ability to earn a livelihood.

6. Estimation of the degree of disability will be made by the principal medical examiner of each examining team after taking cognizance of the disability ratings furnished by each examiner concerned, together with an actual personal examination of the individual in question. The estimation of the degree of disability represents merely the opinion of the principal medical examiner. This opinion will be based upon the physical examinations and disability ratings made by the different special examiners, together with the findings reached at the general examination of the man concerned. It will therefore be the duty of the principal medical examiner to draw and record a resultant on the several opinions expressed by other medical officers as to the degree of disability, and to sign the required certificate. In reaching this decision due consideration must be given to the occupation of the officer or soldier prior to his entry into the military service.

7. A board of review will be designated by the camp surgeon, or other senior medical officer of the command, to act in cases where an officer or soldier claims a defect, as a result of military service, which can not be discovered or confirmed by the examining board. If the defect claimed by the officer or soldier is of a cardiovascular nature, in designating the composition of the board of review to act on this particular case, a cardiovascular specialist should ordinarily be assigned as a member. Likewise, if the claimed defect is orthopedic, dental, tubercular, or neuropsychiatric, one of the members of the board of review should ordinarily be an orthopedic, dental, tuberculous, or neuropsychiatric specialist other than the one on the original examining team.

8. The board of review should not contain as a member the principal medical examiner who has signed the certificate of the examining surgeon. When practicable the board should consist of officers other than those who conducted the examination which failed to discover or confirm the defect claimed by the officer or soldier.

9. The expression, "The wound, injury, or disease $\left\{\begin{matrix}\text{is}\\ \text{is not}\end{matrix}\right\}$ likely to result in death or disability," found on pages 3 and 4 of Form 395–1 and 135–3, A. G. O., conforms to the wording of the war-risk insurance act and should be handled as follows: Either the word "death" or "disability" may be stricken out if the findings warrant, and a clear explanation regarding the condition should be made under "Remarks."

10. If the officer or soldier makes no claim of disability or defect incurred as a result of military service, and if the examining board finds a defect or disability which in its opinion was the result of military service, or which has been aggravated by military service, the certificate of the examining surgeon should clearly set forth such conditions.

11. In the case of soldiers inducted for special and limited military service, the fact of such special and limited military service will be entered at the top of the first page of Form 135–3, A. G. O., before this form reaches the examining board. In such cases special care should be taken in the examination, and under the heading of "Remarks" should be entered a statement of the conditions which the soldier claims existed at date of induction.

12. In the case of a soldier who had a disability or defect prior to induction, and who has incurred an additional disability or defect during military service, in line of duty, or who has had

an existing defect aggravated by military service, discrimination must be made between the degree of disability actually due to the military service and that due to the defect which existed on induction. Full explanation should be made in such instances under the heading of "Remarks." Similar discrimination will be made and action taken when a soldier's occupational ability is decreased as a result of two disabilities, both incurred during military service but one of which is and the other is not in line of duty.

13. The responsibility for making physical examinations prior to separation from the Army rests with the camp surgeon or other senior surgeon of the command. If medical examiners are not available in sufficient numbers to meet the specific requirements of the station, camp, or cantonment, prompt application should be made through military channels for the assignment of the necessary medical personnel. Wherever practicable it is desired that officers and men be examined by a well-balanced examining team of medical officers, and it is believed that in the great majority of cases this can be done. However, there are certain to be many men located at small stations or absent from their respective organizations at the date of muster out who must be examined and mustered out individually. It is probable that such casuals can not be brought before a complete and well-balanced examining board, but will have to be examined by an individual medical officer. Instructions issued in Circular 73, Adjutant General's Office, provide for this contingency.

14. At the end of each calendar month the camp surgeon, or other senior surgeon of the command, will forward direct to the Surgeon General a report in duplicate regarding the work of the examining board. This report should be made out in the form shown in the succeeding pages and should be mailed on or before the 10th of the following month.

Monthly report of physical examination made prior to separation from the military service other than by certificate of discharge for disability at .... month ending .... 19—.

....

(Place and date.)

I.

	Number.		
	White.	Colored.	Total.
Officers examined			
Enlisted men examined			
Grand total			

II.

	Number.		
	White.	Colored.	Total.
Found with no disability:			
Officers			
Enlisted men			
Grand total			

III.

	Number.		
	White.	Colored.	Total.
Found with disability and copy of Form 395-1, A. G. O., or 135-3, S. G. O., provided for B. W. R. I.:			
Officers			
Enlisted men			
Grand total			

IV.

	Number.		
	White.	Colored.	Total.
Number with acute conditions requiring immediate hospital care or other treatment:			
Active gonorrhea			
Active syphilis			
Chancroids			
Body vermin			
Communicable skin disease			
Exanthemata			
Active tuberculosis			
Insanity			
Other conditions			
Grand total			

V.

Name of chief examiner..............................

Efficiency..............................

VI.

Number of examining teams..............................

VII.

Number of examiners on each team, indicating the number of each class of special examiners..............................

....

....

VIII.

NAME OF PRINCIPAL MEDICAL EXAMINER OF EACH TEAM.

Surname.	Christian name.	Rank.	Efficiency.

IX.

NOMINAL LIST OF EXAMINERS ("S" TO BE PLACED BEFORE NAME IF ASSIGNED TO STATION OR CAMP AS SPECIALIST) ON DUTY ON THE LAST DAY OF THE MONTH.

Surname.	Christian name.	Rank.	Specialty.	Date of joining board.

RELIEVED DURING MONTH.

Surname.	Christian name.	Rank.	Specialty.	Date relieved.

X.

Number of Officers and Soldiers Examined Each Day.

Day of month.	Number examined.	Day of month.	Number examined.
1		18	
2		19	
3		20	
4		21	
5		22	
6		23	
7		24	
8		25	
9		26	
10		27	
11		28	
12		29	
13		30	
14		31	
15			
16		Total	
17			

General Remarks or Suggestions for Improvement of the Service:

....

....

....

.... *Medical Corps,*

.... *Camp Surgeon.*

CONDUCT OF MEDICAL EXAMINATION (DEMOBILIZATION).

The following instructions for conducting the physical examination prescribed in paragraph 2 will govern:

(*a*) The physical examination will ordinarily be made in camps or stations in the United States to which troops have been ordered for demobilization or at which they may already be. Such physical examination will be made and completed under the direction of the camp surgeon or other senior surgeon of the command with the least practicable delay. Except in doubtful or deferred cases the examination of any individual officer or soldier should be completed on one day by the examining surgeon or a special examining board designated by the camp surgeon or other senior surgeon of the command.

(*b*) Except in case of small commands, the camp surgeon or other senior surgeon of the command will appoint a medical officer experienced in the duties of examining boards and in conducting physical examinations, who shall be the chief medical examiner of that command.

(*c*) The chief medical examiner will coordinate the duties of and have general supervision over the examining board. He will organize the personnel assigned to it into one or more examining teams, assigning the individual members thereof to such duties as the public interest may dictate. He will appoint a principal medical examiner for each examining team.

(*d*) Each principal medical examiner will supervise the operation of his examining team and will be responsible to the chief medical examiner for the conduction of the physical examinations made by the team and the proper preparation of the necessary records. He will sign the certificate of examining surgeon on form for report of examination.

(*e*) The examining board should consist of sufficient medical officers, including all necessary specialists. Experience has demonstrated that a well-balanced team may be composed somewhat as follows:

	Examiners.
1. General examination, including skin, general surgery, hernia, hemorrhoids, varicocele, varicose veins, etc	3
2. Dental	1
3. Orthopedic, including bones and joints	3
4. Eyes	1
5. Ear, nose, and throat	1
6. Cardiovascular	3
7. Tuberculosis	6
8. Neuropsychiatric	3

(*f*) In the physical examination of special or limited service men, medical examiners will interrogate the soldier as to the disability or defect which he had upon entrance into the service which placed him in the limited-service class. The physical examination of such men will be made with great care, with special reference to the defects which the man states that he had upon entrance into the service.

(*g*) A report of each physical examination will be rendered upon Form No. 395–1, A. G. O., if for an officer, and upon Form 135–3, A. G. O., if for an enlisted man. Should the certificate of the officer or the declaration of the enlisted man be at variance with the finding of the medical examiner, the officer or enlisted man will be immediately referred to a board of review convened by the camp, post, or regimental commander. A formal order convening the board is not necessary and in large camps or posts the power to convene the board will usually be delegated to the camp or post surgeon.

(*h*) The board of review will consist of not less than two medical officers, designated by the camp surgeon or other senior surgeon of the command. The board will be under the supervision of the senior medical examiner. After a thorough physical examination of the officer or soldier referred to it, together with a careful investigation of all the circumstances in the case, it will complete Form No. 395-1, A. G. O., or Form No. 135-3, A. G. O.. as the case may be. (*Cir. No. 73, W. D., November 18, 1918.*)

(*Cir. Memo., Surgeon General's Office, November 21, 1918.*)

Physical Examinations at Students' Army Training Corps Units.

In connection with general instructions which it is understood your office is now preparing to be sent out to commanding officers of Students' Army Training Corps units in connection with prospective muster out of their respective organizations, it is recommended that the following paragraphs relating to physical examinations be incorporated in your orders:

1. At each of the larger units of the Students' Army Training Corps to which at present no medical officer of the Army is now attached, an experienced officer of the Medical Corps will be detailed by the War Department for temporary duty with the unit as chief medical examiner. He will have general supervision over the examining board in connection with the physical examinations required for each officer and soldier immediately preceding separation from the service (Circular 73, A. G. O., November 18, 1918). At units having a medical officer of the Army as unit surgeon, such officer will act as chief medical examiner of this unit.

2. All contract surgeons attached to the unit for duty will be available for detail to the medical examining board under the direction of the chief medical examiner (Circular 73).

3. The chief medical examiner will remain on duty with the unit to which assigned until all physical examinations and the records thereof are completed. When such duty has been completed, the commanding officer of the unit will relieve the chief medical examiner from further duty with the unit to enable him to return to his proper station.

4. It will not be practicable in most instances to provide at Students' Army Training Corps units a complete examining team of specialists, as contemplated in Circular 73, A. G. O., November 18, 1918. The chief medical examiner or senior surgeon of the unit must, therefore, utilize such medical officers and contract surgeons as are available for duty on the examining board, and will require careful and thorough physical examinations to be made to the end that all discoverable defects may be made of record.

5. At some of the smaller stations it will probably be impracticable to detail an officer of the Medical Corps as chief medical examiner of the unit, in which case the contract surgeon attached to the unit will make the required physical examinations and complete the necessary papers. Should cases arise requiring the action of a board of review, and sufficient medical officers or contract surgeons be not available to form such boards, report will at once be made by the unit surgeon to the commanding officer, who will make proper arrangements either to secure additional medical personnel or to transfer cases requiring action by a board of review to other near-by stations.

6. Copy of memorandum, S. G. O., November 21, 1918, is being sent to the surgeon of each Students' Army Training Corps unit. This memorandum is explanatory of the method of examination, and also prescribes the report regarding physical examinations which must be made by the surgeon of each unit to the Surgeon General.

(*Memo. for committee on education and special training, attention Major Briscoe, Surgeon General's Office, November 26, 1918.*)

Instructions for Conducting Physical Examinations on Separation from the Service at Students' Army Training Corps.

1. There are being mailed to the surgeon of each Students' Army Training Corps unit the following circulars and instructions and forms:

(*a*) Circular 73, W. D., 1918.

(*b*) Memorandum of Instructions, S. G. O., November 21, 1918.

(*c*) Special memorandum for committee on education and special training, S. G. O., November 26, 1918.

(*d*) Form 135-3, A. G. O.

(*e*) Form 395-1, A. G. O.

2. It is desired that all medical officers and contract surgeons making the physical examinations for demobilization become familiar with the data listed above before the examinations are begun.

(*Memo. for all medical officers and contract surgeons conducting physical examinations of men of the Students' Army Training Corps units for separation from the United States service, Surgeon General's Office, November 29, 1918.*)

Examination of Overseas Convalescent Detachments.

1. This office has received information that a successful and practical method of classification of overseas convalescent detachments is secured by passing them through the receiving center of the base hospital. There they are examined and classified. Those soldiers found to require further medical and surgical treatment are sent to the base hospital. Those who require no further hospital treatment, but do require hardening by a short period of training and drill before recommendation for discharge, are sent to the convalescent center, and those who have reached a sufficient degree of recovery, including hardening, are recommended for immediate discharge. This method of administration of the convalescent detachment upon reaching the camp is approved by this office.

2. If the examination and classification of the overseas convalescent detachment has been made by the medical personnel of the convalescent center, the plan may be continued at your discretion.

(*Cir. Letter No. 34, Surgeon General's Office, January 18, 1919.*)

Report of Physical Examination.

1. Letter from this office of September 21, 1918 (327–2), requiring monthly report of examinations of drafted men, is extended to include applicants for enlistment in the Regular Army, and all the provisions of said letter will be considered as applicable in this respect.

2. Necessary modifications have been made as shown in the attached form for the monthly reports, which will be used instead of the previous form.

Monthly report of physical examination of applicants for enlistment in the Army at .... (*place and date*), *month ending*.................... 19..

....
(Place and date.)

I.

Total applicants examined..
Number of white men examined..
Number of colored men examined..
Number of other races examined..

II.

	Number.	Percentage of total men examined.
Accepted		
Rejected		

III.

CLASSIFICATION OF DISABILITIES FOUND IN MEN REJECTED.

Cause of rejection.	Number rejected.	Cause of rejection.	Number rejected.
Ophthalmological:		General surgical and skin:	
Astigmatism		Hemorrhoids	
Myopia		Hernia	
Hyperopia		Varicose veins	
Other errors of refraction		Skin diseases	
Other conditions		Other conditions	
Otolaryngological:		Dental:	
Otitis media		Defective or deficient teeth	
Defective hearing		Pyorrhea	
Other conditions		Other conditions	
Cardiovascular:		Venereal:	
Functional cardiac disorder		Syphilis	
Valvular heart disease		Gonorrhea	
Diseases of arteries		Chancroids	
Other conditions		Developmental:	
Neuropsychiatric:		Under weight	
Epilepsy		Under height	
Exophthalmic goiter		Defective physical development	
Mental deficiency		Other conditions	
Other conditions		Miscellaneous physical causes:	
Tuberculosis:		Illiteracy	
Pulmonary		Under age	
Other types		Aliens	
Orthopedic:		Other causes not connected with physical condition	
Pes planus			
Other conditions		Total	

IV.

(*a*) Scheme of organization of examining board.
(*b*) Name and efficiency of chief medical examiner.
(*c*) Number of applicants examined each day.
(*d*) Character and adequacy of examining rooms and equipment.
(*e*) Recommendations for improvement of service.

V.

(*a*) Nominal list of examiners on duty the last day of the month, giving surname, Christian name, and rank ("S" to be placed before name of assigned to station or camp as specialist).

(*b*) Relieved during the month.

....
Medical Corps.

....
Camp Surgeon.

(*Cir. Letter No. 116, Surgeon General's Office, March 4, 1919.*)

SANITATION.

Ventilation.

1. Your attention is invited to the urgent need of providing free and adequate ventilation at all times in squad rooms and tents of your command. At present this is a matter of the utmost importance for the reason that in many camps it has been impossible to provide each man with the recognized allowance of cubic air space.

2. Unless the freest possible circulation of air consistent with comfort is maintained in living and sleeping quarters, serious outbreaks of communicable diseases of the respiratory tract are liable to result.

3. The marked increase in the number of cases of pneumonia in camps of both the National Guard and National Army, with serious outbreaks of this disease and of epidemic meningitis in several camps, makes this matter one of the most serious with which the Medical Department has now to deal.

4. No effort should be spared on your part, by means of frequent instructions to regimental medical officers, inspections, and timely recommendations to the commanding general, to secure safe living conditions among the troops of your division.

(*Cir. Letter, Surgeon General's Office, December 1, 1917.*)

Marking Dormitory Doors with Man Capacity.

The following letter and first indorsement thereon are furnished for your information and guidance:

From: The Surgeon General of the Army.
To: The Adjutant General of the Army.
Subject: Designation on doors of the authorized man capacity of barrack dormitories.

1. It is recommended that there be stenciled on the doors of all barrack dormitories the authorized man capacity of said dormitory, this man capacity to be based upon an authorized allowance per soldier of 50 square feet of floor space and at least 500 cubic feet of air space.

2. Such lettering will serve a double purpose. It will tend to prevent the frequent practice of placing more men in a dormitory than it is adapted for. It will also greatly facilitate sanitary inspections, enabling the inspector to determine if overcrowding exists without the necessity of measuring the room and computing its contents.

[1st Ind.]

221 (Misc. Div.)
War Department, A. G. O., August 9, 1918.

To the commanders of all camps, cantonments, departments, recruit depots, recruit depot posts, and bureaus of the War Department, who will inform those under their control.

(*Letter from the Surgeon General to commanding officer, M. O. T. C., Fort Riley, Kans., and Camp Greenleaf, Ga and to commanding officers of all general, base, and special hospitals, August 14, 1918.*)

Removal of Garbage from Military Camps.

1. I am directed by the Surgeon General to quote a communication from this office, dated June 21, 1918, addressed to the Quartermaster General of the Army:

> The following telegram, having been approved by the Acting Chief of Staff, has been sent to the department surgeons of all departments in the United States:
>
> "This office sees no objection arrangement with responsible civilians to remove garbage from camps and cantonments, provided removal is prompt and carried out under regulations which will insure that no insanitary conditions result. Garbage to be removed in the can. No dumping into wagons permitted. Returned can to be thoroughly cleansed; sterilization by steam desirable. Firms representing considerable capital have applied this office permission to do work. Garbage from cantonments evidently has considerable money value. Believe contractors should give bond."

(*Cir. Letter from the Surgeon General, August 16, 1917.*)

Reports.

1. In order that an accurate record may be kept of the movement of the sick and wounded in organizations, especially as to communicable diseases, it is desired that you direct surgeons of regiments and other units to include pneumonia, paratyphoid, epidemic meningitis, measles, and scarlet fever in their daily consolidated field reports of patients on form 84 (edition of June 15, 1917). Especial care should be taken to see that the number of absent sick is accurately shown. Frequent inspections will be made necessary in the form to show the additional information as indicated on the inclosed model.

2. Surgeons of regiments and other units of the division should keep in their offices consolidated field reports of patients to show, by companies, "number of patients" and "analysis of remaining cases." From this report the data for the consolidated report to the division surgeon will be taken.

3. The division surgeon should keep in his office a consolidated daily field report showing movement of sick by regiments.

4. The division surgeon should also keep a graphic chart showing by curves the daily rate per thousand of noneffectives in the division. Besides this chart, it may appear desirable to maintain other charts showing the amount of disability caused by the various communicable diseases in the division and in individual regiments and other units.

5. In addition, a daily telegraphic report to the Surgeon General will be made of the number of cases of pneumonia and epidemic meningitis in the division.

(*Cir. Letter, Surgeon General's Office, August 22, 1917.*)

Detection of Carriers.

1. It is desired that immediate steps be taken to discover typhoid and paratyphoid carriers among cooks and others engaged in the preparation and handling of foods in your camp.

2. Specimens of stools and urine for examination should be sent to department laboratories until such time as the laboratories of local base hospitals are prepared to undertake such work. Containers for the purpose may be obtained from department laboratories by direct request. Addresses of department laboratories are as follows:

Letterman General Hospital, San Francisco, Calif.
Department laboratory, Fort Leavenworth, Kans.
Department laboratory, Fort Sam Houston, Tex.
Department laboratory, 810 Hunt Building, Atlanta, Ga.
Army Medical School, Washington, D. C.

(*Cir. Letter from the Surgeon General, August 30, 1917.*)

Supplies for the Making of Graphic Charts and Plotting Maps.

1. The Supply Department of this office has been requested to furnish the supply office of each cantonment with a supply of Moore's push pins in nine colors, maps of the territory from which the troops in each cantonment are drawn, and a supply of cross-section paper.

2. It is suggested that the cross-section paper be used for keeping the graphic charts outlined in paragraph 4 of the letter from this office of August 21, 1917.

3. The Public Health Service will be requested to notify each division surgeon direct of the various communicable diseases which are reported in the section from which the troops in each cantonment are drawn. Probably it would be of service to you to have maps and colored pins to indicate the places where these diseases are reported.

(*Cir. Letter, Surgeon General's Office, September 6, 1917.*)

Daily Telegraphic Report Epidemic Meningitis and Pneumonia.

1. In the daily telegram reporting cases of epidemic meningitis and pneumonia required by paragraph 5, letter of this office of August 21, report new cases only.

(*Cir. Letter, Surgeon General's Office, September 11, 1917.*)

Preparation of Weekly Telegraphic Reports of Diseases and Injuries.

1. It is the understanding of this office that the weekly telegraphic report of diseases and injuries should be prepared so as to show conditions in the division as a whole. No attempt should be made to indicate the number of individual officers and enlisted men as belonging to the Regular Army, National Guard, or National Army. Mention of these branches of the service in instructions from the Adjutant General's Office evidently refer to Regular, National Guard, or National Army divisions only.

(*Cir. Letter, Surgeon General's Office, September 19, 1917.*)

Sanitary Inspections of Restaurants, etc.

1. It is desired that you make appropriate recommendation to the commanding general of your command with a view to debarring soldiers from entering restaurants, booths for sale of food, hotels, barber shops, manicure parlors, ice-cream parlors, soda-fountain establishments, and places of similar character which have not been inspected and furnished a permit or certificate of inspection by an officer of the Public Health Service, or by a representative from your office in the event that no public-health official is on duty in your extra-cantonment area.

2. The following is suggested as a draft of such an order to be requested by you to accomplish the above results. It should, of course, be modified as needed to meet local conditions:

GENERAL ORDERS NO. ....
HEADQUARTERS, ...,
......................, *1917.*

1. Soldiers of this camp will not patronize any restaurant, hotel, booth for sale of food, barber shop, manicure parlor, or soda-fountain establishment unless the same shall have a certificate of inspection. This certificate of inspection will be issued by a representative of the United States Public Health Service (or by the division surgeon) only upon compliance with the rules and regulations governing sanitary inspection issued by the United States Public Health Service (or by the division surgeon) and shall be revocable at the discretion of the issuing authority.

2. The military police are instructed to carry out the provision of paragraph 1.

By command of ....

....
Chief of Staff.

Official:

....
Adjutant.

3. The fullest possible cooperation should be cultivated between your office and the representative of the United States Public Health Service in your extracantonment area. At cantonments where no public-health official is at present on duty, the work of extra-cantonment inspection should be turned over to such official on his arrival.

4. Prompt report will be made to this office as to what action has been taken under the provisions of these instructions.

(*Cir. Letter from the Surgeon General, December 3, 1917.*)

Sanitary Squads and Mobile Laboratories for Division.

1. To comply with request of the commanding general, American Expeditionary Forces, there should be assigned to each division leaving the United States two sanitary squads with a personnel of 1 officer, 4 noncommissioned officers, 20 privates, and 2 chauffeurs; and one mobile laboratory with a personnel of 1 officer and 5 men.

2. The sanitary squads should be organized and mobilized in the division camps. They should sail one month prior to the division, and notification to that effect should be made from the division to the chief of embarkation service.

You are requested to wire this office at once, attention Colonel Glennan, if there are already on duty with your division two officers suitable for assignment in command of sanitary squads, giving their names. If there are no such officers available with your division, two will be assigned to report to the division commander for this duty. The enlisted personnel must be made up within the division.

3. Mobile laboratories will be organized at Fort Leavenworth, Kans., and will proceed from that point to the port of embarkation one month prior to the division to which they have been assigned.

4. There should be on duty with each division, and prepared to accompany the division on overseas service, a dental surgeon and assistants in the proportion of one of each for each 1,000 men of the division. If this number of dental surgeons is not on duty with the division, the Surgeon General's Office should be notified in order that the deficiency may be supplied before the division embarks for overseas service.

(*Cir. Letter from the Surgeon General, December 6, 1917.*)

Drainage and Mosquito Prevention.

1. An early report is desired as to the status of drainage and other antimalarial work in your camp. This report should be accompanied by a blue print of the reservation, large size, if possible, showing the layout of the work already completed, or begun, and such new work as may be considered necessary to do away with mosquito breeding the coming season.

2. Information is desired also covering this work in extra cantonment areas, by whom it is undertaken, the degree of completion, and any other information bearing on this subject that may be of interest to this office.

(*Cir. Letter from the Surgeon General, January 17, 1918.*)

Infirmaries.

1. The Surgeon General directs that division surgeons give their personal and careful attention to the very unsatisfactory condition which exists in regimental infirmaries in order that the large number of complaints regarding work being done therein may be eliminated.

2. Reports have reached this office which indicate that the treatment of wounds in infirmaries is intrusted to untrained enlisted men, and that frequent infections arise from improper treatment. It has been stated that medical officers on duty in these infirmaries are lax in their attendance and superficial and inaccurate in their methods of physical examination, and that in many cases their work violates every principle of scientific medicine and surgery. Many instances have been reported which indicate that medical officers view with suspicion men applying for treatment and for admission to hospitals.

3. The Surgeon General directs that at least one regimental surgeon shall be on duty at each infirmary at all hours and that if necessary more than one officer be detailed. If the number of officers on duty in the division is under the number allowed by the Tables of Organization, you are directed to make application for assignment of the proper numbers.

4. Complaints regarding treatment received at regimental infirmaries are being referred for action to the Inspector General's Department.

(*Cir. Letter, Surgeon General's Office, February —, 1918.*)

Weekly Telegraphic Report of Sick.

1. Weekly telegraphic reports of sick received in this office show an unusually high admission rate for some camps. In one camp it appears that certain convalescents were returned to duty by the base hospital and immediately marked "quarters" by the regimental surgeon, thus making two admissions for the same case. Paragraph 450, M. D., states: "Return to duty is always a completion of the case and the cure is assumed to be complete unless a statement to the contrary is entered." When patients are discharged from the base hospital before they are able to perform full duty, they should be regularly transferred to the regimental infirmary for further treatment in quarters.

2. With reference to weekly telegraphic report of sick, division surgeons will exercise care that admissions are not duplicated. No entry will be made on line F. "Transferred to home station, etc.," unless cases are transferred out of the division.

(*Cir. Letter, Surgeon General's Office, February 8, 1918.*)

Use of Oil on Floors.

1. On January 22, 1918, request from this office for the issue of kerosene and crude oil for use on floors of barracks was approved by The Adjutant General. It is desired that a report be made to this office, attention Colonel Howard, stating whether oil is being issued for this purpose and whether the results attained are satisfactory.

2. It is believed that the use of oil will materially reduce the dust in barracks and will render possible the cleansing of the floors with the use of a minimum amount of water.

(*Cir. Memo., Surgeon General's Office, February 25, 1918.*)

Fly Prevention.

1. In view of the approach of the fly season, attention is directed to the following paragraphs showing what is considered to be a reasonable allowance of fly traps, fly paper, and fly swatters for camps, cantonments, and other stations. Any recommendations made by you on this subject should conform to these standards unless local conditions are such as to require or permit modifications. It is understood that commanding officers of camps, cantonments, and other stations will be directed by the War Department, at an early date, to submit estimates for providing traps, fly paper, and swatters.

2. Large flytraps, approximately 21 by 21 inches, should be provided in the following numbers for the points designated:

(*a*) At each stable or picket line or a regiment or other organization	10
(*b*) At each stable or corral in a remount station	20
(*c*) At each veterinary hospital	25
(*d*) At each cantonment garbage-transfer station	25
(*e*) At each manure loading platform	25

3. Medium size flytraps, approximately 14 by 14 inches, should be provided in the following numbers for the points designated:

(*a*) For each garbage-can platform at each mess	4
(*b*) For each door of each kitchen and mess room of a company or other organization	2
(*c*) In each lavatory building or pit latrine shelter	2
(*d*) At each door or each bakery	2
(*e*) In and about each exchange or a regiment or other organization	12
(*f*) For each division, or other large cantonment, for replacements and for miscellaneous use, including contractors' camps	300

4. Small size flytraps or the usual balloon or cone shaped type (about 6 inches in diameter), or similar small type, should be provided in the following numbers for the points designated:

(*a*) For use in the mess room and kitchen of each company or other organization	12
(*b*) For the kitchen and mess room of each base hospital	25
(*c*) For the diet kitchen in each ward of each base hospital	2
(*d*) For each lavatory in base hospital wards	2
(*e*) For each bakery	20

5. Large and medium size traps of the general type of the Curry Champion portable, folding, all-metal trap have been found satisfactory.

6. Fly paper, preferably of the "Pyramid" ribbon type, should be provided in the following amounts for the points indicated:

	Rolls per week.
(*a*) For each mess of a company or other organization	12
(*b*) For each bakery	36
(*c*) For each base hospital ward	12
(*d*) For the main kitchen of each base hospital	36
(*e*) For the exchange of each regiment or other organization	24
(*f*) For each lavatory building or pit latrine shelter	6
(*g*) For the laboratory of each base hospital	12
(*h*) For the morgue of each base hospital	6
(*i*) For each division for miscellaneous uses	200

7. Fly swatters should be provided at the rate of 12 for the mess room and kitchen of each company or other organization.

8. Early action in providing these articles is extremely important. The prevention of the fly nuisance is largely dependent upon action at the beginning of the fly season in order that the first flies appearing after their winter hibernation may, as far as possible, be destroyed before they have time to perpetuate the species.

(*Cir. Memo. from the Surgeon General, March 5, 1918.*)

Weekly Telegraphic Report of Sick.

1. In weekly telegraphic reports of sick to this office it is desired in future that distinction be made between cases of venereal disease contracted prior to arrival at the station and those contracted after joining station.

2. This distinction will be noted only on line C, "Admitted this week," as follows The total number of cases of venereal disease appearing during the week which have not been previously recorded will be reported as "venereal," as at present. The number of new cases contracted after joining station will be reported as "New." No distinction need be made on line H, "Remaining sick end of week."

3. The weekly telegram reporting 60 cases of venereal disease contracted prior to arrival at station and 10 contracted after arrival would read: "Venereal, 70; new, 10."

4. The above instructions are for reporting venereal disease in the weekly telegraphic report only and do not affect the entries on the sick and wounded card (Form 52).

(*Cir. Letter, Surgeon General's Office, March 14, 1918.*)

Dish Washing.

1. Complaints have come from many civilian sources about the manner of dishwashing or mess kit washing in vogue in many camps, viz, that large numbers of men rinse their kits in the same small bucket or can of water, so that late comers really use a cold or cool slop mixture.

2. Many worthy persons are suffering from anxiety as to the health of sons or other relatives supposedly endangered by this dirty practice.

3. While this office is without evidence that disease has been spread by the practice complained of, it must be admitted that the practice is dirty and not in accord with the teachings of good housekeeping or good hygiene.

4. In only exceptional circumstances will it be impossible, by the exercise of a little ingenuity, to obtain water decently clean and scalding hot for the use of each man.

5. Surgeons with all commands are directed to bring this matter to the attention of line officers and to bring about proper practices. Should they be unable to do so, report will be made to this office.

(*Cir. Memo. from the Surgeon General, March 23, 1918.*)

Records of Vaccinations.

From: The Surgeon General of the Army. MAY 31, 1918.
To: The Adjutant General of the Army.
Subject: Records of vaccinations.

1. Attention is invited to the following extract from a cablegram received from General Pershing:

[Extract from cablegram received at War Department, May 27, 1918, 3.40 a. m.]

From: H. A. E. F.
To: The Adjutant General, Washington.

PARAGRAPH 8. For Surgeon General: Many service records of soldiers arriving in France, both casuals and in units, fail to show notations of vaccinations against smallpox, typhoid, and paratyphoid. Believed that for most cases protection has been given but incomplete record made. Strongly urge every effort as soon as possible to check each card and complete record prior to leaving United States for transit.

2. Records of smallpox vaccinations, and of typhoid and paratyphoid prophylaxis, are kept by the surgeon. Report of the completion of these procedures is furnished the company commander by the surgeon (pars. 188 and 193 (*b*), M. M. D. as modified by Changes, M. M. D., No. 6, 1918). Proper space for notation of results is provided on the service card and the responsibility for properly recording the results appears to rest on company commanders (par. 280, A. R.).

3. It is recommended that the attention of all company and detachment commanders be called to the importance of recording these data and that they be directed to call promptly upon the surgeon for the necessary information in the cases of all soldiers where report of smallpox vaccination and typhoid and paratyphoid prophylaxis has not been made.

[1st Ind.]

On copy of—
720 (Misc. Div.).
War Department, A. G. O., June 7, 1918.

To the commanding generals, Regular Army, National Army, and National Guard divisions, department commanders, and excepted places, for their information and guidance.

By order of the Secretary of War:

Roy A. Hill,
Adjutant General.

(*Cir. Memo., Surgeon General's Office, June 11, 1918.*)

Dengue Fever.

1. Upon the appearance of the first recognized case of dengue fever, immediate telegraphic report will be made to this office.

2. Dengue fever will be added to the list of diseases to be reported in the weekly telegraphic report. The number of new cases will be reported on line C and the number remaining at end of week reported on line H.

(*Cir. Letter, Surgeon General's Office, June 17, 1918.*)

Intoxication Resulting from Use of Vanilla and Lemon Extracts.

1. The following is furnished for your information:

Memorandum No. 231.
Headquarters National Army Cantonment,
Camp Devens, Ayer, Mass., July 24, 1918.

1. The camp surgeon reports a number of cases of intoxication among members of the command resulting from the use of vanilla and lemon extract as a beverage.

2. Reports of sanitary inspectors show that empty extract bottles are seen in large quantities and that practically all companies have excess stock of these supplies on hand, the average supply for 16 companies of vanilla extract alone being sufficient, if based on the ration, to last for 227 days. In two companies the stock of 800 ounces was sufficient for nine and one-half months.

3. In view of the above, the camp quartermaster will hereafter not issue vanilla or lemon extracts in excess of the ration allowance. All supplies of these extracts in excess of 14 days' ration allowance on hand with organizations will be returned to the quartermaster. Any excess of these extracts beyond the 14 days' allowance found by inspectors will be reported to these headquarters.

By order of Colonel Byroade:

Frank B. Edwards,
Lieutenant Colonel, Infantry, N. A., Acting Chief of Staff.

Official:
R. A. Dunford,
Major, Infantry, U. S. A., Adjutant.

(*Cir. Letter, Surgeon General's Office, July 29, 1918.*)

Louse Infestation and Eradication.

The importance of body lice as a factor in transmitting disease, and their eradication, has attracted great interest since the outbreak of the present war. The louse not only transmits typhus fever, relapsing fever, and trench fever, but its presence disturbs the morale of the soldier by causing irritation of the skin and scratching, often followed by infection, loss of sleep, and impaired vitality. The louse has probably been responsible for transmitting a larger percentage of disease in the present war than any other single factor. It is truly called the "pest of the soldier." Just as the fly was a menace in the Spanish-American War, so the body louse has been the scourge in this war.

Body lice have been found with more or less frequency in troops reaching the ports of embarkation in this country and on arrival at foreign ports. Observations recently made in this country showed louse infestation in 42 per cent of a group of negro soldiers and in 0.6 per cent of a group of white soldiers. In a body of negro workmen in a certain camp, 100 per cent were found carrying pediculus corporis (vestimenti). At the same time 2.1 per cent of the crew of transports and about 59 per cent of prostitutes were found louse infested. (These percentages include the three types of lice.) As these observations were made in summer, when the incidence of body vermin is low, it is fair to assume that the percentage will be higher in winter.

It has been found that the average medical officer has had little experience with this question and has formulated no definite ideas on louse eradication; further, the accounts in textbooks are very meager, and though the literature on this subject is extensive, much of it is worthless.

Therefore an attempt has been made to assemble the important data on this subject for the guidance of the men in the field.

Human lice have been divided into three different species—*Pediculus humanis* (*capitis*), *Pediculus corporis* (*vestimenti*), and *Phthirius pubis*. The head louse and the body louse have been regarded by some observers as races of one species.

Pediculus humanis (*capitis*)—*Head louse.*—The head louse is most often found in children, but adults are frequently infested. It is smaller than the body louse and usually lays its eggs on the hair behind the ears, and occiput, but may lay its eggs on the hair or other parts of the body.

The treatment for this condition should be clipping the hair of the head with a hair clipper and washing with a mixture of equal parts of kerosene and vinegar. This should be followed in a few hours by a bath with soap and hot water. Following this treatment, search should be made for nits and lice, and if found the treatment should be repeated. The hair should be caught in bags and burned. In order to reduce the liability to infestation, the hair should be kept close at all times.

Phthirius pubis—*Crab louse.*—This is the common type of infestation found in our men. Although the crab louse has not been shown to be a transmitter of disease, still it is very annoying, and its presence is a reflection on the man's cleanliness.

The crab louse lives on all hairy parts of the body, except the head, its most frequent habitat being the hair of the pubic region.

This insect is transmitted mainly by contact in lodging houses, houses of prostitution, bathtubs, and perhaps occasionally from toilet seats.

The treatment for this condition is to shave the hair of the pubic region, axillæ, chest, and legs. This should be followed by an application of the kerosene and vinegar mixture, followed by a bath with soap and warm water. The application of mercurial ointment is practiced quite frequently, but its use may cause a dermatitis To take its place the following formula has been suggested:

Yellow oxide of mercury	10
Salicylic acid	1
Vaseline	90

Pediculus corporis (*vestimenti*)—*Body louse or clothes louse.*—It is the body louse that is mainly responsible for the transmission of disease. The louse is a parasite which depends upon human blood for sustenance and man's body and clothing for prolonged life and reproduction.

The body louse, or more properly "clothes louse," is somewhat larger than the head louse and is a dirty gray color, from which it has received the name "gray back." The nits, or eggs, are oval, pearly bodies, which measure about 1 mm. in length. The louse and its eggs are found in the seams of clothing and on the hairs of the body. The inner clothing is preferred, but it lives in the outer clothing as well. They are most frequently found in the seams of the undershirt, drawers, fork of the trousers, armpits, and waistline. Emphasis should be laid upon the fact that body lice may lay their eggs in the hair of the head, axillæ, chest, and pubic region. Nits have been found in the hairs of every external part of the body. In Serbia and Bulgaria, prisoners were found with nits in the eyebrows. Lice are not frequently found in blankets, straw, or bedding, but may be deposited there from extremely lousy men.

In view of this wide distribution of the body louse and its eggs, attention must be called to the importance of examining the clothing, as well as the body, for lice. It has been the practice of a number of medical officers to pass over the clothes casually, or not even examine them at all. Knowing the habitat of the louse, one can readily see that such an examination is worthless. A proper examination, therefore, would include a careful search for lice and eggs in the hair of the head, axillæ, chest, and pubic region, with a thorough search in the seams of the inner and outer clothing.

The dissemination of lice occurs from the infested person mainly. Vermin may be dislodged while dressing or undressing. They may be transferred to bedding or straw or may be blown by the wind from person to person. Contact between individuals sleeping or associating in close quarters is the main method of transfer. For these reasons a louse-infested man should be looked upon as one would look upon a meningococcus carrier, for he is a real danger to his associates until his condition is cleaned up.

Under proper conditions of moisture and temperature it takes four to eight days for eggs to mature. A single female can lay from 275 to 300 eggs in 20 to 30 days. If the clothing is removed from the body for a portion of the time, so that the optimum temperature is not maintained, the hatching period may be extended to five weeks. The egg is firmly attached to the hair by a small amount of cement. Lice prefer fur, felt, or wool for oviposition, but will lay their eggs on silk. For this reason silk underwear has proven of little protective value.

Recently hatched lice feed immediately; if no food is obtained they usually die in 24 hours.

Adult lice usually feed twice a day for 20 minutes, but may feed more frequently. An adult louse can survive 9 to 10 days without feeding. The body louse lives on human blood, which is obtained by sucking through the skin. Lice depend upon the salivary secretion to dilate the capillaries by its irritation, thus causing a flow of blood to the part bitten. A hungry louse will infest the feces of other lice, for the feces often contain a large proportion of undigested red blood cells. Young lice take from 10 to 14 days to attain sexual maturity, and females, after reaching maturity, require 2 to 4 days before they commence to deposit their eggs. Eggs separated from the body may remain dormant for 40 days. The average length of life of a male louse is 30 days and of a female louse 38 days. Lice will wander from the host, especially if the surroundings are warm. If the host has fever they will leave his clothing and wander out. They are very susceptible to warmth. In Mexico it is said that the louse-infested peasants in Mexico City, which is situated in the mountains and is cool, often come down to Vera Cruz, where it is warm, in order to get rid of their lice.

It is believed that lice transmit disease by way of the feces rather than by injecting the virus through the bite. The virus in the feces gains entrance through the puncture wounds made while sucking or through the abrasions made by the subsequent scratching.

Method of delousing.—Delousing is the process of destroying lice and their eggs and the virus concerned in transmitting disease. The methods in use may be divided as follows:

Physical—Heat—
    A. Moist—
        1. Boiling water.
        2. Serbian barrels.
        3. Steam chambers.
    B. Dry—
        1. Flat iron.
        2. Hot ovens.
Chemical—
    A. Insecticides.
    B. Fumigation.

In the process of delousing persons, the clothing, bedding, and quarters must be treated.

Boiling water.—Immersion of clothing in boiling water for 5 to 10 minutes will destroy lice and their eggs. Immersion in boiling water for one minute was not enough to kill the eggs in one case. This method is not to be recommended, for it injures woolen clothing and is impractical on a large scale, as so much time is lost in drying.

Serbian barrel.—This is a large barrel the bottom of which is freely perforated while the top is removed and replaced by a weighted flat lid. At the lower end there is a sand-bag collar to prevent the escape of steam, which enters the barrel from a metal boiler upon which it rests, both barrel and boiler being imbedded at their junction in the brickwork forming the furnace. The furnace may be made long and narrow, with a chimney at one end and the boilers and barrels placed in series.

The important condition is that steam must be generated rapidly; therefore a vigorous fire and boiler having a due proportion of surface to bulk for its contents must be obtained. The clothing to be deloused is placed in these barrels and the top placed on tightly. After the steam is generated the clothing remains in the barrel for one hour. This is an improvised method and worked very well in Serbia.

Steam chambers.—The best method for destroying lice and eggs and the one insuring absolute certainty is steam.

In order to delouse a man properly, the man and all his clothing and blankets must be treated. As has been indicated, the louse lives in the clothing of man, and may lay its eggs in the hair of the head, axillæ, chest, and pubic region, and may be deposited in blankets or bedding occupied by a lousy man. Further, the virus is present in the feces of lice; therefore, any delousing method, to be efficacious, must provide for the care of all these things.

The following plan has been suggested as one where all the conditions are met and where a large number of men can be quickly deloused in a day. It is desirable that the entire company be deloused when a man is found infested with pediculus corporis (vestimenti).

The man enters the porch of a delousing plant with his barrack bag containing all his spare clothing. The leather material (such as shoes, belt, and hat, rubber, celluloid material, and money are passed in at the locker room. The man receives two numbered tags corresponding to the number of the locker, and then proceeds to the disrobing room with his barrack bag. Here he undresses and places all his clothing in the bag, which is tied and numbered with one of the tags, the man retaining the remaining tag. The bag is then placed in a carriage, which is pushed into the steam sterilizer. The soldier then proceeds to the hair-cutting room, where the hair is cropped with an electric hair-cutting machine. The axillary and pubic hair can be shaved in this room. Following this he enters the shower room, where a bath with soap and warm water is obtained. The drying room follows, a table being provided for the clean towels and a receptacle to receive the soiled ones. In the dressing room the man will find his bag, which has passed through the steam sterilizer, and will reclaim the leather material, etc., from the locker room at the exit.

With a plant of the size contemplated for large camps and cantonments 260 men can be deloused every hour, or approximately 6,000 men a day.

No provision is made for sterilizing the leather material, hat, etc., for it is not considered necessary to do this as a routine in this country. If these articles need disinfection, use may be made of a liquid disinfectant or a fumigation method as described below.

The bath consists mainly of soap and hot water. Liquid soap is preferable, so as to avoid contamination by contact. Various soaps have been recommended, the best being: (*a*) cresol soap; (*b*) soapsuds and kerosene, equal parts, or a soap made as follows:

Boil 1 part of soap chips in 4 parts of water and then 2 parts of kerosene oil, or 4 parts of gasoline. This jellies when cold. One part of this soap jelly added to 4 parts of warm water makes a good cheap liquid soap.

The barrack bags remain in the steam sterilizer for 20 minutes (under 15 pounds pressure) and five minutes longer, with the vacuum applied, to dry clothing.

Provision is made for a pressing room where the uniform can be pressed at the time of delousing or at some other time.

The floors of the plant should be carefully scrubbed with hot water and lysol each night.

The attendants may wear the "louse-proof" suit, which consists of two garments. The trousers are like pajamas with stockings attached to cover the shoes. The upper garment covers the head and has gloves sewed in the sleeves.

Various methods of using dry heat have been recommended.

Flatiron.—This method consists in ironing the moistened seams with a hot iron. If only a single case occurs, this method may be used, but on a large scale it is impracticable, for it is time-consuming, and the number of ironers would have to equal the number of bathers so that the clothes would be ready for the men when they came out of the bath. There is a personal element introduced in this method, the efficiency depending upon how well the ironers do their work.

Hot ovens.—Hot ovens have been used and various other means for obtaining dry heat have been recommended. Dry heat at 177° F. will kill lice in 5 to 10 minutes. This method is good, but the penetration of the heat into bundles is not as complete as when using steam. Dry heat must be carefully watched and regulated to prevent scorching of the clothing.

Insecticides.—Numerous insecticides have been recommended, but there is none that will destroy lice and their eggs with certainty. Only the most important ones will be given.

The English have used the N. C. I. powder with some success. This powder consists of:

	Per cent.
Naphthalene	96
Creosote	2
Iodoform	2

The commercial naphthalene is the best.

The powder is dusted over the underclothing and on the inner side of the outer clothing at least once a week. The best results are obtained when the men dust their clothes freely and roll themselves and their clothes tightly in blankets for the night. This preparation is a rapid killing agent and is a complete deterrent. The effect of one application lasts five days. Care must be exercised in using the powder in the fork of the trousers because it may cause smarting.

N. C. I. powder is moist, hence difficult to dust through the clothing.

It has been found that a powder consisting of—

Talc	grams	20
Creosote	c. c.	1
Sulphur	grams	0.5

is effective. It causes less irritation to the skin and is easier to apply than the N. C. I. powder.

In conjunction with the N. C. I. powder, the English use a mixture called "Vermijelli," which consists of—

	Parts.
Crude oil	9
Soft soap	5
Water	1

This is smeared once a week on all interior seams of clothing and the body is anointed with it.

Crude naphthalene sprinkled in the clothing has given good results, but it causes skin irritation, the same as N. C. I. powder.

A vermicide recommended by the British Army is a mixture of potash soft soap, 10 per cent, and crude naphthalene, 90 per cent. Sodium soap may be used in place of potassium soap.

Various essential oils have been used with little success, as they are of temporary value. Oil of bergamot, anise, fennel, cinnamon, cloves, and eucalyptus have been used in 10 to 20 per cent alcoholic solutions. These oils are costly and their killing power is low.

Impregnation of underclothing with various chemical substances has given negative results up to the present. It is hoped that some efficacious substance will be found in the near future. Impregnation in a 5 per cent solution of an emulsion, composed of 45 to 50 per cent of soft soap, combined by heating with 50 to 55 per cent crude carbolic, has been recommended.

Various insect powders worn in sachets have been recommended, but are of little value.

The immersion of clothing in gasoline or benzine is recommended by some, and likewise exposure in a tight vessel to benzine fumes for 24 hours. This method may be used in individual cases.

Fumigation.—Sulphur dioxide: Lice and eggs are said to be killed in two hours by sulphur dioxide vapor. The clothing should be hung loosely in a room. Ten pounds of sulphur are burned for every 1,000 cubic feet. It has been reported that sulphur dioxide injures woolen materials.

Hydrocyanic-acid gas.—Vacuum fumigation with hydrocyanic-acid gas has given good results in the hands of some observers. As it has not been definitely proven that this method will kill nits, its use is not suggested for universal delousing. It has the advantage of being able to disinfect leather material. The gas is generated by the addition of sulphuric acid to sodium cyanide or potassium cyanide in earthern jars or wooden barrels. The use of this gas is very dangerous. For lice, 10 ounces of cyanide is necessary for each 1,000 cubic feet with an exposure of two hours, using a 20-inch vacuum. It is claimed that 3½ ounces of sodium cyanide per 100 cubic feet will kill lice and nits in 30 minutes. When finished, all doors and windows should be opened and the building thoroughly aired.

Cyanide is a dangerous chemical to put in the hands of unskilled and untrained men. It has slight bactericidal power, and as the virus is present in the feces, the gas will kill the lice, but the active virus still remains in the clothing.

Chlorpicrin has been used. It penetrates clothing and kills lice in all parts in 15 minutes and eggs in 30 minutes. By increasing the heat in the fumigation chamber, the time required to kill the eggs could be reduced.

For the treatment of quarters, the following method is recommended:

Wash the walls with 5 per cent carbolic acid or kerosene; then fumigate with sulphur fumes, using 5 pounds of sulphur to 1,000 cubic feet. Keep room closed for six hours.

In order to handle the louse question properly, its seriousness must be appreciated. Endemic typhus fever is present in this country, and with the presence of the body louse in large congregations of men its danger must be appreciated. Further, men are returning from France, where louse-borne diseases are present in large numbers. In some instances these men leave the other side louse-infested. It is therefore important that the medical officers in camps and at the ports of embarkation be cognizant of these facts, and treat the condition vigorously and efficiently.

It is recommended that medical officers instruct officers and men in the importance of the louse in the transmission of disease, and investigate particularly whether the provisions of paragraph 18½, S. R. 28, are complied with. Special officers should be detailed to supervise the louse inspections. It is claimed that louse infestation in the British Army was started by new recruits who came from verminous slums, and that owing to the crowded condition of the men the infestation rapidly spread from man to man to such extent that now it is almost impossible to rid the British Army of them. If the louse-infested individuals are promptly and properly treated, we need not fear any such condition among the troops in this country at least.

(*Cir. Memo. from the Surgeon General, August 1, 1918.*)

Morbidity Rate Variations.

1. Your attention is invited to the following memorandum issued from this office under date of February 23, 1918:

FEBRUARY 23, 1918.

Memorandum for all division surgeons and for surgeons of special camps and for chief surgeon, Aviation Section.

1. The reports received in this office indicate that there is a higher morbidity and mortality rate for the serious infectious diseases among troops drawn from the South than is the case among troops drawn from sections of the North, where the distribution into rural and urban corresponds approximately with that found in the South. It is believed that uncinariasis and chronic malarial infections are both factors of much importance in producing this higher morbidity and mortality rate by reason of the lower resistance which they produce. As is well known, infestation with a certain number of hookworms is extremely common in the South, the percentage in rural communities ranging from 60 to 100 per cent.

2. In connection with the arrival of newly drafted men in the National Army and other camps, it is deemed of great importance that infections with hookworm and malaria should be treated before the men become exposed to the general infections so commonly found in large camps. All practicable measures should be taken for the early detection of uncinariasis and chronic malaria and for the adequate treatment of the infected. The indiscriminate treatment of persons coming from hookworm or malarious sections, prior to a definite diagnosis, should not be practiced. Laboratory facilities should be used to the utmost. Additional laboratory personnel and equipment will be furnished if needed, and prompt telegraphic request for same should be made. Where detention camps are established the examinations and treatment should, as far as practicable, be carried out during the period of detention.

2. These instructions are supplemented as follows:

All recruits and recently inducted men from the following States or other political divisions should be examined for hookworm as soon as possible after their arrival in your camp: Maryland, Virginia, District of Columbia, West Virginia, Kentucky, Missouri, Oklahoma, Texas, and all States lying to the south of them, and also Porto Rico, Cuba, Mexico, Hawaii, the Philippine Islands, and other tropical countries. Troops coming from other States who have been serving for six months or more in the hookworm region should also be examined and, when necessary, be treated for the disease. In addition, all patients admitted to hospital should be examined for intestinal parasites as rapidly as men can be trained for the work.

(*Cir. Memo., Surgeon General's Office, Aug. 17, 1918.*)

Soft Drinks.

1. A number of requests have been received by the Surgeon General for information as to whether certain soft drinks were approved for sale to soldiers. This circular letter has been prepared to prevent any misunderstanding on the subject.

2. It is not the policy of the Surgeon General to recommend any particular artificial soft drink. In composition they nearly all contain considerable quantities of sugar and sometimes saccharin, commercial organic acids, artificial flavors, synthetic dyes, and frequently alkaloids, such as caffein or even strychnine; and a good many are misbranded, if not in a legal sense, at least to such an extent as to tend to deceive the consumer. Drinks, the names of which would indicate that they are derived from natural fruits, are frequently found to contain no natural juices whatever.

3. The reasons for the large consumption of these beverages in camps would seem to be (1) a craving for sugar, (2) thirst, (3) the desire for such pleasure as the agreeable taste may afford, (4) habit, particularly when the drink contains caffein or other drug. (1) The craving for sugar appears to be a real expression of physiological need and should be met by increase of sweets furnished regularly at the mess; this step has already been advised. (2) Thirst is an indication for water, and is best met by drinking water, or water containing a little lemon juice. Soft drinks are frequently kept on ice and are therefore particularly attractive to the men after exercise or

in warm weather, whereas the water supplied is usually at ordinary temperature. Pains should be taken to cool the drinking water, preferably about 50° F.; water or any other drink at ice temperature is objectionable if taken in large quantities. (3) The desire for the agreeable sweet flavor can easily be controlled, or if thought best may be met by the issue of a small amount of candy of definite composition. (4) In this country it is usually considered that tobacco and coffee furnish all the alkaloid the soldier can profitably utilize. However, if it be desired to give him more caffein the English plan of serving him tea is far preferable to caffein-containing soft drinks of indefinite composition. It is very common in the camps for the men after drilling or other exercise to find themselves warm and tired, and as soon as released from duty they hurry to the canteens and buy a bottle or two of these beverages. This usually occurs shortly before meal time. The result is that their appetites are more or less perverted and their enjoyment of the food lessened and probably their digestive activity is reduced. It has already been suggested by this office that all canteens be closed for at least an hour before meals.

4. An inquiry was recently addressed to the Surgeon General by one of the division surgeons giving the names of certain beverages and inquiring whether these drinks were approved for use in the canteens. This list contains 22 names, and this office has on file a list of analyses of about an equal number of drinks, yet only two names on these two lists agree. This will give some idea of the enormous number of such beverages which are being prepared and sold in all parts of the country. It does little good to analyze one of these drinks since there is nothing to keep the manufacturer from changing his formula or name as often as he pleases, and as a matter of fact this has frequently been done. With the enormous number on the market it is practically impossible to repeat the analysis of any particular one sufficiently often to maintain a reasonable control of its composition. With a few exceptions they are prepared by hygienically irresponsible business firms, or even small tradesmen, who care nothing at all about the physiological desirability of their product, but are only interested in the profits derived from it. The advertisements and the labels put on the packages are frequently misleading, and this office does not wish to take the attitude that any artificial "soft drink is approved or for sale in Army cantonments"; they are at best an unfortunate nuisance.

5. Natural fruit juices put up without antiseptic and depending for their keeping qualities upon sterility, are not objectionable, and in so far as they carry salts and vitamines serve a useful purpose. Pure grape, orange, pineapple, loganberry, or other pure, undoctored fruit juices would seem to have nothing against them except their rather high cost. Such drinks should, however, be employed with discretion, avoiding excessive amounts at too low a temperature; inordinate indulgence in them can easily give rise to gastritis and other disturbances of the digestive tract.

(*Cir. Letter, Surgeon General's Office, September 11, 1918.*)

Daily and Weekly Telegraphic Reports of Sick.

1. In submitting daily telegraphic report of number of new cases of influenza, pneumonia, meningitis, empyema, together with the number of deaths occurring each day, please be guided by the following instructions:

(*a*) If no deaths, nor no new cases of influenza, pneumonia, meningitis, or empyema have occurred, make no report.

(*b*) If new cases have occurred, report as briefly as possible; e. g., influenza, 19; pneumonia, 16; meningitis, 2 deaths; pneumonia, 5; others, 2.

(*c*) In reporting new cases of pneumonia admitted, or deaths resulting from pneumonia, do not differentiate between "lobar pneumonia" and "broncho-pneumonia," or as "pneumonia following influenza or measles," but simply as "pneumonia."

(*d*) In reporting deaths daily by telegraph, classify as follows: (1) Pneumonia, (2) all others, grouping all deaths except those occurring from pneumonia under the heading "others"; e. g., deaths, pneumonia, 4; others, 2. Do not report deaths by name to this division.

(*e*) In submitting weekly telegraphic report of sick, Form 86, classify all deaths by cause briefly; e. g., pneumonia, 2; tuberculosis, 1; traumatism, 1. On your weekly telegraphic report do not report deaths as occurring from "other diseases."

2. It is desired that you make your telegrams as short and concise as possible and at the same time give this office the desired information.

(*Cir. Letter, Surgeon General's Office, October 3, 1918.*)

Sanitary Conditions at Students' Army Training Corps Units.

It is desired that you report to this office, attention Division of Sanitation, regarding the sanitary conditions at your school or college. This report should be made as promptly as practicable and should cover the points indicated below, as well as any other matters which you consider worthy of mention. In preparing this report the order and paragraph numbers given below should be followed and the paragraph and subparagraph headings should be transcribed. Report should be in duplicate.

1. Date.

2. Name of school.

3. Location.

4. Number of inducted men in this school at date of report. (If more are to be inducted in near future, state numbers of these separately.)

5. Names of medical officers or contract surgeons on duty at school.

6. Number and grades of enlisted men, Medical Department, on duty at school, if any.

7. Data regarding physical examination prior to induction:

(*a*) Date of beginning and of completion of examination.

(*b*) Total number examined.

(*c*) Number accepted for general military service.

(*d*) Number accepted for special and limited military service.

(*e*) Number rejected.

(*f*) Have identification records been made for each inducted man?

(*g*) Have all inducted men received smallpox vaccination?

(*h*) Has the administration of triple typhoid vaccine been carried out in all cases?

(*i*) Has report of physical examination been made to Surgeon General as required by letter S. G. O., September 21, 1918?

8. Data relating to housing facilities:

(*a*) Number of inducted men quartered in each of the following: College dormitories, private houses, buildings rented for quarters, buildings specially constructed as barracks, and other types.

(*b*) General character of each class of buildings referred to in preceding subhead (*a*).

(*c*) In case of college dormitories, number of men per room and sizes of different types of rooms.

(*d*) Amount of floor area per bed allowed throughout all buildings used as sleeping quarters. Halls, lavatories, closets, recreation rooms, and mess halls should not be included in floor area.)

(*e*) Character and adequacy of ventilation.

(*f*) Character and adequacy of heating.

(*g*) Adequacy of fire escapes.

(*h*) Character and adequacy of toilet and bathing facilities. Tubs or showers? Is sewage disposal adequate?

(*i*) Sufficiency of hot water.

(*j*) Relation of toilets to kitchens, dining rooms, and sleeping quarters. Can flies pass back and forth?

(*k*) Adequacy of screening against mosquitoes.

(*l*) Character and adequacy of beds, mattresses, and bedding.

9. Data regarding water supply:

(*a*) Source, quality, and adequacy.

(*b*) When was it last examined chemically or bacteriologically?

(*c*) How often is it examined?

(*d*) Results of last examination.

(*e*) Are common drinking cups used?

10. Data regarding food and messing arrangements:

(*a*) Character, size, and adequacy of each of the mess rooms and kitchens. Seating capacity of each of the mess rooms.

(*b*) Are mess rooms and kitchens screened against flies?

(*c*) Are dishes washed in a manner to secure cleanliness and to sterilize them?

(*d*) Cleanliness of food, kitchens, and mess rooms.

(*e*) Efficiency and cleanliness of steward, cooks, and attendants.

(*f*) Are food handlers examined at intervals to eliminate the ill? Have they received triple typhoid inoculations?

(*g*) Source, character, and sufficiency of food supplies (including milk).

(*h*) Is food inspected by a medical officer; and, if so, how often?

(*i*) System and adequacy of garbage disposal.

11. Data regarding care of the sick:

(*a*) Number sick in hospital and in quarters on date of report. How many of these have venereal disease? How many have pneumonia? Number of deaths since college opened?

(*b*) Method of caring for seriously ill. If in a civil hospital, give brief description of same, adequacy of care, cost of care, and location with reference to school.

(*c*) Adequacy of ambulance service.

(*d*) Describe the infirmary of dispensary building, if any. (Location, adequacy, character of construction, number of wards, number of beds, type of bed, floor space per bed, toilet, bathing and heating facilities, method of feeding patients, etc.)

(*e*) Are there rooms for isolating infectious cases? If so, number and capacity of same. Is the bedding in such rooms sterilized after each case is disposed of?

(*f*) Are cases of acute respiratory diseases screened from one another and from those with other diseases?

(*g*) Number of attendants for the sick (male and female), efficiency and sufficiency of same.

(*h*) Character and adequacy of operating room, if any.

(*i*) Provisions for emergency surgical operations.

(*j*) Are there sufficient medical supplies of all kinds?

(*k*) Is there undue delay in receiving supplies?

(*l*) Are there sufficient official manuals and blank forms on hand? Have you a copy of the Manual Medical Department, 1917?

(*m*) Is a monthly report of sick and wounded being rendered?

(*n*) Is sick call held daily?

(*o*) Steps taken to detect and remove from barracks early cases of communicable disease.

(*p*) Are physical inspections, particularly with a view to detecting venereal disease, held twice monthly?

12. Character, sufficiency, and adequacy of clothing, including woolen uniforms, shoes, woolen underwear, hats, leggins, and raincoats.

13. Character and adequacy of laundry facilities. Prices for work.

14. Is the town in which the school is located free from saloons and houses of prostitution?

15. Is the local police department acting efficiently in preventing prostitution?

16. Is instruction given to all inducted men regarding the danger of venereal disease and the methods of preventing it?

17. Is there a station for administering venereal prophylactic treatment and are records kept of all such treatments?

18. Miscellaneous information.

19. Recommendations to Surgeon General.

By direction of the Acting Surgeon General.

(*Cir. Letter to surgeons, Students' Army Training Corps units. Surgeon General's Office, October 9, 1918.*)

Bacteriological Standards for Purity of Drinking Water.

1. The standard of purity adopted by the Treasury Department for drinking water supplied by common carriers in interstate commerce will be adopted in the interpretation of the results of bacteriological analysis of drinking water supplied to camps and cantonments.

2. The standard referred to is as follows:

Not more than one out of five 10 c. c. portions of any sample examined shall show the presence of organisms of the *B. coli* group.

3. In the routine analysis of any drinking water, the following quantities of water should be tested to determine the presence of aerobic lactose-fermenting organisms: Five 10 c. c. portions, one 1 c. c. portion, one 0.1 c. c. portion.

The methods of the American Public Health Association as outlined in Standard Methods of Water Analysis, or Manual No. 6, Medical Department, should be adhered to in all analyses.

(*Cir. Letter, Surgeon General's Office, October 19, 1918.*)

Annual Report for Calendar Year 1918.

1. Annual report for the calendar year 1918 from each division camp or other large camp is desired. This report should be similar to the one furnished by the department surgeons, as required by paragraph 370, M. M. D., 1916. It should include a general discussion of the sanitation of the camps, of the measures taken for the prevention of epidemic diseases, of the morbidity and mortality of the troops serving in the camps, of all epidemics of infectious diseases, and of any other matters of hygienic or professional interest that may be considered worthy of note. The report should be comprehensive, though as brief and concise as practicable to cover the subject. Statistical tables are not necessary.

2. The report should be forwarded as early as practicable after the close of the calendar year and should be addressed to the office of the Surgeon General, attention Medical Record Division.

(*Cir. Letter from the Surgeon General, November 14, 1918.*)

Relation of Commanding Officers of Students' Army Training Corps Units and State Laws of Health.

The following decision of the War Department is quoted for your information and guidance:

1. The commanding officer of a Students' Army Training Corps unit does not have authority to disregard the lawful regulations of the State and local board of health in force in the community in which the Students' Army Training Corps unit is operating. The State and local law must be obeyed in so far as it applies to members of a Students' Army Training Corps unit.

(*Memo. for all surgeons of Students' Army Training Corps units, Surgeon General's Office, November 18, 1918.*)

Treatment of Barrack Floors.

1. On January 22, 1918, request from this office for the issue of kerosene and crude oil for use on floors of barracks was approved by The Adjutant General. It is desired that a report be made to this office, attention Colonel Howard, stating whether oil is being issued for this purpose and whether the results attained are satisfactory.

2. It is believed that the use of oil will materially reduce the dust in barracks, and will render possible the cleansing of the floors with the use of a minimum amount of water.

(*Cir. Memo. from the Surgeon General, November 25, 1918.*)

Lectures on Sanitation and Hygiene.

1. It is desired that the surgeon of each camp in which troops are being demobilized designate a well-qualified medical officer to conduct a series of short talks relative to the preservation of health to all soldiers prior to their discharge. The officer so designated will place himself in communication with the camp morale officer, who has been instructed to make the necessary arrangements as to time, place, and other details in connection with these talks.

2. The delivery of three talks of 20 to 25 minutes each is contemplated. Should local conditions make it more convenient, a single lecture of an hour or so in duration may be substituted.

3. A syllabus for the guidance of medical officers conducting the discussions mentioned may be found in the special morale circular issued by the Morale Branch, General Staff, December 31, 1918.

(*Cir. Letter No. 10, Surgeon General's Office, January 4, 1919.*)

Louse Infestation Among Troops Returning from Overseas.

1. Reports received in this office indicate that overseas patients who have been sent to base and general hospitals in the interior from camps of debarkation have in some instances been found infested with lice.

2. It is desired that commanding officers report to this office, attention Division of Sanitation, regarding any instance of vermin infestation found in patients arriving at their respective hospitals, giving the number of such patients and the camp of debarkation from which these men came.

(*Cir. Letter No. 15, Surgeon General's Office, January 8, 1919.*)

Food Poisoning—Botulism.

1. The following data regarding food poisoning, resulting from the growth therein of the *Bacillus botulinus*, has been prepared by the Section of Food and Nutrition, and is circulated for the information and guidance of those concerned.

2. Botulism is one of the most dangerous of food poisonings. It is caused by the growth in foodstuffs of *Bacillus botulinus.* Formerly it was thought that the presence of this organism was peculiar to meats, especially sausage. Recent investigations have shown that the *Bacillus botulinus* is capable of growth in certain canned vegetables and to some extent in canned fruits, the metabolic processes producing highly dangerous toxins.

3. The heat of ordinary cookery will not destroy the spores of this organism; hence food so infected is not sterilized. No toxin is produced in the human body by the growth and multiplication of the *Bacillus botulinus* therein. The toxin in canned foodstuffs will be destroyed upon the food being taken from the container and boiled for five minutes. Such precaution should be taken upon the slightest evidence of spoilage in foods of such nature. The boiling destroys only the preformed toxin; it does not kill the spores. To obviate the development of spores, and hence the production of toxin, the boiling should occur shortly before the food is served.

4. Additional information regarding botulism may be had by reference to The Effect of Heat on the Spores of Bacillus Botulinus, page 88, J. A. M. A., January 11, 1919; also to Botulism and Clinical Experimental Study, Rockefeller Institute for Medical Research, July 31, 1918.

(*Cir. Letter No. 56, Surgeon General's Office, January 28, 1919.*)

Fly Prevention.

1. In connection with Circular No. 133, War Department, March 18, 1919, and in view of the approach of the fly season, attention is directed to the following paragraphs showing what is considered to be a reasonable allowance of flytraps, fly paper, and fly swatters for camps, cantonments, and other stations. Any action taken or recommendations made by you on this subject should conform to these standards unless local conditions are such as to require or permit modifications.

2. Large flytraps, approximately 21 by 21 inches, should be provided in the following numbers for the points designated:

(*a*) At each stable or picket line of a regiment or other organization	10
(*b*) At each stable or corral in a remount station	20
(*c*) At each veterinary hospital	25
(*d*) At each cantonment garbage transfer station	25
(*e*) At each manure-loading platform	25

3. Medium-size flytraps, approximately 14 by 14 inches, should be provided in the following numbers for the points designated:

(*a*) For each garbage-can platform at each mess	4
(*b*) For each door of each kitchen and mess room of a company or other organization	2
(*c*) In each lavatory building or pit latrine shelter	2
(*d*) At each door of each bakery	2
(*e*) In and about each exchange of a regiment or other organization	12
(*f*) For each camp or large cantonment, for replacements and for miscellaneous use, including contractors' camps	300

4. Small-size flytraps of the usual balloon or cone shape type (about 6 inches in diameter), or similar small type, should be provided in the following numbers for the points designated:

(*a*) For use in the mess room and kitchen of each company or other organization	12
(*b*) For the kitchen and mess room of each base or general hospital	25
(*c*) For the diet kitchen in each ward of each base or general hospital	2
(*d*) For each lavatory in a hospital ward	2
(*e*) For each bakery	20
(*f*) For the morgue of each base or general hospital	2

5. Large and medium size traps of the general type of the Curry Champion portable, folding, all-metal traps have been found satisfactory.

6. Fly paper, preferably of the Pyramid ribbon type, should be provided in the following amounts for the points indicated:

	Rolls per week.
(*a*) For each mess of a company or other organization	12
(*b*) For each bakery	36
(*c*) For each base or general hospital ward	12
(*d*) For the main kitchen of each base or general hospital	36
(*e*) For the exchange of each regiment or other organization	24
(*f*) For each lavatory building or pit latrine shelter	6
(*g*) For the laboratory of each base or general hospital	12
(*h*) For the morgue of each base or general hospital	6
(*i*) For each camp, for miscellaneous uses	200

7. Fly swatters should be provided at the rate of 12 for the mess room and kitchen of each company or other organization.

8. Early action in providing these articles is extremely important. The prevention of the fly nuisance is largely dependent upon action at the beginning of the fly season in order that the first flies appearing after their winter hibernation may, as far as possible, be destroyed before they have time to perpetuate the species.

9. Energetic action should be taken to the end that the above appliances are continuously and efficiently maintained at the points indicated. Particular care is necessary to insure that traps are properly and frequently baited.

(*Cir. Letter No. 148, Surgeon General's Office, March 22, 1919.*)

Precautions for the Prevention of the Development and Spread of Respiratory and Other Sputum-Borne Diseases.

1. With the onset of cool weather, it is to be expected that the incidence of respiratory and other sputum-borne diseases will increase. All of the well-known precautions for preventing the development and spread of these diseases should be instituted by you, and consistently enforced. When cases occur, an intensive study should be made with a view to locating the origin of the infection and limiting the development of future cases. Among the preventive measures which should be particularly investigated by you at this time, and at all times supervised, are the following:

(*a*) Adequacy of floor space and cubic air space in company barracks and in hospital wards. Marking of capacity of dormitories thereon.

(*b*) Placing men in barracks with head of one man opposite feet of adjacent men when the distance between the heads of sleepers would otherwise be less than 5 feet.

(*c*) Proper supervising of heating and ventilation in barracks and wards, particularly at night. Also in offices during the daytime.

(*d*) Supervision of ventilation in places of general assembly.

(*e*) Cleanliness of barrack floors and prevention of dust. Oiling of floors.

(*f*) Marking of cases with respiratory, or other sputum-borne diseases, on or before their arrival at hospital, and while they are waiting distribution to their appropriate wards.

(*g*) Adequacy of compliance with memorandum, S. G. O., January 1, 1918, with reference to the care of infectious diseases in hospitals.

(*h*) Prevention of the use of common drinking cups.

(*i*) Adequacy of the washing of dishes and mess kits. This matter, as a rule, does not receive sufficient attention, either in company barracks or in hospitals. Attention is invited to Circulars 21 and 48, and Bulletin 66, War Department, 1918, which should be carefully and intelligently complied with. In hospitals particular attention should be given to the washing and sterilization of dishes, in ward pantries as well as in general messes. Where steam tables are available, the dishes in ward pantries may be readily sterilized in the steam table.

(*j*) Adequacy of clothing and bedding for the command.

(*k*) Adequacy of compliance with A. R. 286, paragraph 36; S. R. No. 28; and other sanitary regulations.

(1) Character and adequacy of steps to remove men promptly from barracks when they begin to feel ill. Grade of professional service at sick call. Particular attention is invited to memoranda from this office regarding prevention of infectious diseases, dated February 19, 1918; September 6, 1918, September 24, 1918; and September 30, 1918.

2. All cases of measles and influenza, however mild, should be early and carefully treated in bed and kept free from danger of chilling. It is believed that thereby the danger of a complicating pneumonia is greatly decreased. Attention is particularly invited to the necessity for retaining cases of measles and influenza on sick report, and either in hospital or in well-warmed barracks for at least 10 days after the temperature has become permanently normal. Also to the necessity for considering all types of pneumonia as contagious and for handling them accordingly, and for segregating postmeasles and postinfluenza pneumonias from primary lobar pneumonias.

3. It is desired that you report at once to this office, attention Division of Sanitation, regarding the measures taken by you to carry out the provisions of this circular letter. Thereafter a report will be made at the end of each month. Attached are copies of certain War Department instructions bearing on the matters referred to in this circular letter. If any of the memoranda or circulars from this office referred to above are not on file, you can obtain them by telegraphic request.

[6th ind.]

S. G. O. 720 (Misc. Div.).

S. G. O., War Dept., December 1, 1917. To The Adjutant General of the Army.

1. During the past two weeks there has been still further increase in the number of new cases of pneumonia and meningitis in camps of the National Army and National Guard to the extent of 993 new cases of pneumonia and 128 new cases of meningitis. There have been reported to this office 189 deaths from pneumonia and 21 deaths from meningitis during this period. In several camps pneumonia prevails in epidemic form.

2. It is urgently recommended that in each National Army camp the cubic air space and the square floor space per man be immediately increased by additional construction so as to provide a minimum of 500 cubic feet and 45 square feet respectively in each squad room where it does not already reach that allowance on the basis of the ultimate maximum strength of the particular organization.

3. It is recommended that in all barracks the men be required to sleep with the feet of one man opposite the heads of the two adjacent men. This arrangement will permit of at least five feet separation between the heads and so decrease the chances of spreading respiratory diseases.

4. The use of any portion of the authorized dormitory space for amusement rooms, barber shops, offices, or any other than sleeping purposes should be prohibited. The placing of bunks in groups of two, the bunks being in contact, should also be prohibited.

5. Experience has shown that the use of double-deck bunks invariably leads to over-crowding because of apparent great increase of floor space when this type of bunk is used. Where double-deck bunks have already been installed, 1,000 cubic feet of air space and 90 square feet of floor space per bunk should be insisted upon. The placing of double-deck bunks in groups of two and four should be prohibited.

For the Surgeon General.

F. P. Reynolds, *Colonel, Medical Corps.*

[8th ind.]

720 General (Misc. Div.).

War Dept., A. G. O., December 8, 1917. To the Surgeon General, with the information that:

1. All department and National Army division commanders have been instructed by telegraph to carry out such matters as are recommended in paragraphs 3, 4, and 5 of sixth indorsement and to allow each man a minimum of 500 cubic feet air space and 45 square feet floor space in squad rooms.

2. There is sufficient construction already supplied to allow the space required if properly distributed.

By order of the Secretary of War:

J. B. Wilson, *Adjutant General.*

Circular }
No. 68. }

War Department,
Washington, November 15, 1918.

Oiling Floors in Barracks.

1. It has been reported to the War Department that in some camps the instructions relative to the oiling of floors in barracks, contained in letter of January 22, 1918, from The Adjutant General of the Army to the Quartermaster General, and directed to be carried out in first indorsement on copies of that letter to camp commanders, are not being carried out because of the disapproval of local authorities to the practice.

2. The instructions referred to are as follows:

"The Secretary of War directs that the floors of temporary buildings in all National Army cantonments, National Guard camps, aviation fields, ports of embarkation, and similar stations be treated in the following manner:

"There will be applied to such floors with a mop or soft brush a mixture of equal parts of crude oil and kerosene mixed. If kerosene can not be obtained, about a quart of crude oil will be poured into a bucket of hot water and thoroughly stirred. This mixture will be applied as above, and will give practically the same results as the first mixture. The frequency with which it will be necessary to apply this treatment will depend on weather conditions, ranging from once in 10 days to once every three weeks."

3. It is of great importance that dust in barracks be reduced to a minimum, and especially so during the prevalence of respiratory diseases. Steps will accordingly be taken to carry out the instructions on the subject.

4. The necessary oil for the purpose may be procured in accordance with the procedure set forth in Quartermaster Notice No. 115.

[600.3, A. G. O.]

By order of the Secretary of War:

Peyton C. March,
General, Chief of Staff.

Official:
P. C. Harris,
The Adjutant General.

War Department,
Office of the Surgeon General,
Washington.

From: The Surgeon General of the Army.
To: Division and camp surgeons, surgeon's recruit depots and depot posts, department surgeons, surgeons, ports of embarkation, and officer in charge of medical section, Air Service.
Subject: Tentage accommodations.

1. The following is furnished for your information:

Memorandum for The Adjutant General of the Army.
Subject: Tentage accommodations.

The Secretary of War directs that the following information be communicated to commanding generals of divisions in the United States, department commanders, and the Quartermaster General:

In housing men in tents, the following rules will be observed: For permanent occupancy in the summer season, if there is no sickness in camp, six men should be placed in each pyramidal tent. For temporary occupancy in camp, eight men to a tent. In the winter, or if undue sickness develops in the summer, five men to a tent. These figures will be used as the basis for requisitions for tentage.

Henry Jervey
Brigadier General, N. A.,
Acting Assistant Chief of Staff, Director of Operations.

By direction of the Surgeon General:

D. C. Howard, *Colonel, Medical Corps.*

War Department,
Office of the Surgeon General,
Washington, August 14, 1918.

Commanding officer M. O. T. C., Fort Riley, Kans., and Camp Greenleaf, Ga., and to commanding officers of all general, base, and special hospitals.

The following letter and first indorsement thereon are furnished for your information and guidance:

From: The Surgeon General of the Army.
To: The Adjutant General of the Army.
Subject: Designation on doors of the authorized man capacity of barrack dormitories.

1. It is recommended that there be stenciled on the doors of all barrack dormitories the authorized man capacity of said dormitory, this man capacity to be based upon an authorized allowance per soldier of 50 square feet of floor space and at least 500 cubic feet of air space.

2. The following legend is recommended:

Authorized capacity............men.

3. Such lettering will serve a double purpose. It will tend to prevent the frequent practice of placing more men in a dormitory than it is adapted for. It will also greatly facilitate sanitary inspections, enabling the inspector to determine if overcrowding exists without the necessity of measuring the room and computing its contents.

For the Surgeon General.

D. C. Howard, *Colonel, Medical Corps.*

1st ind.

221 (Misc. Div.).

War Department, A. G. O., August 9, 1918.

To the commanders of all camps, cantonments, departments, recruit depots, recruit depot posts, and bureaus of the War Department, who will inform those under their control.

By order of the Secretary of War:

Paul Giddings, *Adjutant General.*

(*Cir. Letter No. 326, Surgeon General's Office, October 13, 1919.*)

Additional Data Called for in Monthly Sanitary Report.

1. In future it is desired that on the monthly sanitary report, Form 50, Medical Department, a statement be made in paragraph 7 as to the strength of command on the last day of the month and the noneffective rate on that date.

2. It is further desired that in paragraph 9, recommendations be lettered (*a*), (*b*), (*c*), etc., in order to facilitate reference to the individual recommendations.

(*Cir. Letter No. 355, Surgeon General's Office, November 24, 1919.*)

Laboratory Examination of Water and Sewage.

1. One of the functions of the engineering officer of the Sanitary Corps assigned to the camp as sanitary engineer is to see to it that the results of operation of the camp water and sewage systems by the utilities officer conforms to good sanitary standards. As a necessary aid in the discharge

of this function, routine and special laboratory examinations and tests, both chemical and bacterial, are needed; and it is manifestly desirable that the analytical data upon which the engineer must depend for information should come through a laboratory of the Medical Department.

2. Such laboratory examinations as the sanitary engineer may require will ordinarily be made at the laboratory of the base or general hospital in the camp, though in exceptional instances they may be made in a laboratory of the utilities officer, the local water company, or the United States Public Health Service, if sanctioned by the camp surgeon. In all cases the engineer should be thoroughly satisfied as to the propriety of the methods employed and the reliability of the results attained. In some camps the hospital laboratory may lack necessary apparatus or reagents for making chemical analyses. In order that any deficiency in this direction may be supplied, a catalogue of apparatus and reagents carried in stock by medical supply depots is being forwarded under separate cover. Requisitions should be made through the chief of the laboratory in the usual manner.

3. The sanitary engineer is expected to cultivate and maintain a close cooperative arrangement with the utilities officer for the interchange of useful data regarding the operation of camp water and sewage systems. To give him proper laboratory support will greatly strengthen his hands in securing and maintaining suitable standards of operation of these vital utilities.

(*Cir. Letter, Surgeon General's Office, November 29, 1918.*)

ACUTE INFECTIOUS DISEASES AND THEIR CONTROL.

Epidemic Meningitis.

1. The first paragraph on page 24 of Special Regulations No. 28 may be amplified as follows:

For purposes of carrier examinations to be made after the occurrence of a case of epidemic cerebrospinal meningitis the word "group" should be taken to mean:

First. Other members of the same squad or tents.

Second. All other men in the same room.

Third. All other men in the same building or company.

In other words, the examinations should be extended in increasing circles about a case as rapidly as time and laboratory facilities permit. While such examinations are made on the smaller group, the largest group should be treated as potential carriers. All men in the group should be quarantined and prevented from mingling as individuals with others within or without the camp; they may, however, be permitted to attend drills and other formations as a unit. In the meantime, sprays and gargles may be used if so timed that 24 hours without treatment will precede the examination.

All carriers as rapidly as detected are removed from the building and isolated in a hospital or detention camp until free from meningococci. On completion of the examination and removal of the carriers, the quarantine may be raised.

The methods of prevention given on same page of Special Regulations No. 28 must be studied and put into practice. Further information can be found in the phamphlet by Maj. Simon Flexner on Modes of Prevention, Means of Prevention, and Specific Treatment of Epidemic Meningitis.

(*Cir. Letter, Surgeon General's Office, November 15, 1917.*)

Care of Infectious Diseases in Hospitals.

Report of inspectors indicate lack of uniformity in the care and isolation of infectious disease in hospitals, and in many instances the steps taken are reported to be insufficient to prevent possible spread of infection and development of complications. The following procedure should be followed whenever local conditions permit. When any or all of the necessary medical department material is lacking, requisition should be made by telegraph to this office for the needed articles, attention Colonel Howard, and referring to this memorandum as authority. Such additional precautions should be taken as are deemed advisable by the commanding officer of the hospital.

1. *Meningitis.*—Strict isolation should be instituted. Male attendants should be segregated and not allowed to eat or sleep with the sanitary detachment. The same steps should be carried out with female nurses as far as possible. When on duty in the wards all female nurses, male attendants, and medical officers should wear operating gowns, caps, and gauze masks over nose and mouth. The hands should be thoroughly washed and disinfected after coming off duty and before leaving the ward. Cultures should be taken every fourth day from medical officers, nurses,

and male attendants on duty in meningitis wards, and no such nurse or attendant should be assigned to other duty until a negative culture is obtained. Bedding, clothing, etc., of patients, and gowns and caps of attendants should be thoroughly disinfected by steam or chemicals before going to the laundry. Nasal and oral discharges of patients should be disinfected or burned. Dishes, etc., for bringing food should be sterilized before being returned to the general kitchen. Meningitis convalescents and carriers will not be returned to duty until after three consecutive negative cultures taken at intervals of from three to six days. Meningitis carriers should not be segregated in the same room with men sick with meningitis, but in a suitable segregation ward, camp, or barrack.

2. *Diphtheria.*—The same precautions should be taken as prescribed for meningitis. In addition, the Schick test should be applied to nurses and male attendants, and those not immune should be immunized.

3. *Measles.*—An allowance of at least 1,000 cubic feet per patient should be provided in wards or barracks used for treating measles patients. Wires should be arranged across measles wards and sheets, or newspapers, hung over these in such a way as to form a screen between each two patients; or some other suitable screening arrangement should be provided. This is with a view to preventing spread of pneumonia by droplet infection during coughing. Patients convalescent from measles should be retained in hospital, or in a well-warmed convalescent barrack, for at least 10 days after the temperature has permanently returned to normal. Medical officers, nurses, and male attendants in measles wards will wear gowns, caps, and face masks. Nasal discharges and sputum of patients will be disinfected. Oral cleanliness should receive special attention. Attendants who have had measles should be selected, if possible, for duty in measles wards. Floors of wards should be gone over daily with a cloth wet in disinfectant. Dishes and eating utensils should be disinfected. Individual drinking cups should be used. Particular care should be taken to disinfect thermometers and other utensils as they pass from patient to patient. Wards should be kept warm. A urinary examination should be made before discharge from hospital.

Patients developing pneumonia should immediately be removed from the measles wards. They should not be placed in the same wards with primary lobar pneumonia.

4. *Pneumonia.*—Pneumonia patients should be treated in wards used exclusively for pneumonia. Ordinary lobar pneumonias and post-measles and post-scarlet-fever pneumonia should not be treated in the same wards. At least 1,000 cubic feet of air space per patient should be provided, and all of the precautions referred to in the section on measles should be carried out, viz, gowns, caps, masks, screens between beds, disinfection of utensils, thermometers, excretions, and floors. Convalescent pneumonia patients should use a mild antiseptic mouth wash as long as they remain in hospital, and should pay special attention to oral hygiene. Special attention should be given to the early detection of empyema.

5. *Scarlet fever.*—All of the precautions prescribed in measles should be carried out in the treatment of this disease. Attendants who have had scarlet fever should be selected when possible.

Patients should not be released from quarantine until nasal, aural, glandular, or other abnormal discharges have ceased, and all open sores have healed, nor earlier than six weeks after the onset of the disease under any circumstances. A urinary examination should be made before discharge from hospital.

6. *Smallpox.*—Patients should be handled with the same precautions as meningitis, and in addition all attendants and others in the vicinity and all contacts should be revaccinated. Smallpox may safely be treated in a room in the isolation ward if these precautions are observed.

7. Where the hospital facilities are insufficient to provide treatment for measles and scarlet-fever patients for the periods above prescribed, request should be made to the commanding general for the setting aside of the necessary barracks or tentage for use as convalescent hospitals. Special attention should be given to keeping such convalescent quarters well warmed, and additional stoves should be installed if necessary. Warm and conveniently located lavatories are essential. Patients in the acute stage of measles and scarlet fever should use commodes.

8. Enlisted attendants in wards for infectious diseases should wear white cotton coats and trousers, which should be changed twice a week. These garments are on hand in depots and should be requisitioned for at once by the local quartermaster.

9. No nurse or attendant should have charge of two different classes of the above-mentioned infectious diseases. Medical officers in charge of different classes of infectious diseases will carefully disinfect the hands before passing from one class to the other.

10. No blanket or mattress cover used for any of the above-mentioned diseases should be used for another patient until it has been disinfected by steam or chemicals or laundered at a steam laundry. Preferably they should be laundered. The underclothes of patients admitted for the above-mentioned diseases should be disinfected by steam or chemicals at once, or laundered, preferably the latter. Other clothing, except in the case of measles, should be disinfected by formaldehyde in a closed box, and then aired and sunned for three consecutive days.

11. In wards used for the above-mentioned infectious diseases, paper napkins are recommended for receiving nasal secretions. At the head of each bed will be kept a paper bag, fastened to the bed by adhesive plaster. These bags will be used for napkins, gauze, swabs, and other infected refuse, and will be burned when full. Napkins and paper bags may be purchased locally, quoting this memorandum as authority.

12. The above precautions in regard to measles are prescribed primarily to diminish the incidence of the very fatal post-measles pneumonia, which has reached alarming proportions in some camps. There has been widespread failure to appreciate the seriousness of measles under existing camp conditions.

13. Immediately on receipt of this memorandum, the commanding officer of a hospital will hold a conference with such of his assistants as are concerned with the handling of infectious diseases, and will arrange for the carrying out of the details as far as local conditions will permit. Report of action taken will be made to this office, attention Colonel Howard.

(*Cir. Memo. from the Surgeon General, January 1, 1918.*)

Camp Epidemiologist.

1. It is contemplated that an officer of the Medical Department with special training as an epidemiologist will be assigned to each camp and cantonment where serious epidemic disease exists. While not an officer of the division, he will be under your jurisdiction in your capacity as camp surgeon, acting under the immediate control of the sanitary inspector as his assistant. Where the amount of sickness warrants such action, it is desired that in each brigade a suitable medical officer be selected who will be assigned as whole or part time assistant to the epidemiologist. One of these should be trained as an understudy with a view to having him serve as an assistant to the sanitary inspector in communicable-disease problems when the division leaves camp. The epidemiologist should make such reports to you as you deem necessary.

2. It is expected that the epidemiologist will be given free access to the wards of the base hospital and that the commanding officer and staff of the hospital will cooperate with him in every way. The facilities of the laboratory should be at his disposal in so far as the study of epidemics may render this desirable. In the event of serious epidemics, prompt request by wire should be made to this office for additional bacteriologists if needed.

3. The epidemiologist should personally, or through one of his assistants, visit the tent or barrack in which each case of infectious disease originates, and observe, as far as possible, everything pertaining to that case from an epidemiological standpoint. He should assure himself that the necessary quarantine measures and the daily inspections for incipient cases are promptly inaugurated and carefully carried out, and that proper disinfection of contaminated articles is practiced. In all these steps he should act through and in cooperation with the regimental commander and regimental surgeon.

4. He should trace the connection, if any, between cases, and observe where the sick man came from, how long he has been in the camp and in the service, where he has been, and what associates he has had, if any, outside his present company.

5. He should investigate the air space per man, the arrangement of beds, the ventilation and the heating in infected barracks, and also the clothing of the soldiers concerned, in so far as these factors pertain to the prevalence of disease.

6. He should give special attention to the adequacy of the prescribed examinations of outgoing and incoming troops for the detection of incipient communicable disease.

7. He should keep spot maps of infectious diseases in the camp. In this connection special attention must be given to the frequent movement of whole organizations from one barrack to another, to the change in personnel within organizations and from one organization to another, and to the constant arrival of new men from outside the camp.

8. Under your supervision, he should give to the medical officers of the camp special instructions, by lectures and practical demonstrations, regarding the most approved methods of handling communicable diseases.

9. The attached extracts indicate the character of detention camps and quarantine camps which will probably be constructed at each cantonment and camp. The epidemiologist should supervise the management of both camps. At the detention camps the following points should especially be emphasized: The camps will consist of huts holding eight men, or tents holding five. These huts or tent units must be kept separate. Drills must be by these units only. In the vaccination, the physical examination, and the issuing of clothing, great care should be taken to prevent one squad of eight, or group of five, from being in a room at the same time as another squad or group. Messing should be outdoors or, during inclement weather, in the huts or tents.

10. The following points should receive special attention in view of the prevalence in our camps at present of the diseases named. The particular details to be emphasized in caring for these diseases while in hospital are covered by memorandum, S. G. O., dated January 1, 1918, and sent to all division surgeons and base hospitals.

(*a*) *Measles.*—This disease should be regarded as one having a high mortality, not directly, but through its complications and sequelæ. Experience has shown that patients sick with measles often carry most virulent pneumococci, streptococci, influenza bacilli, meningococci, and possibly other dangerous organisms. Patients with measles should be treated with every possible provision for the protection of one patient from another, and of the physicians, nurses, and male attendants from the patients. Convalescent cases should be carefully guarded for a long period in well-warmed quarters.

The period of infectivity probably lasts as long as the abnormal discharges from the mucous membranes persist. All such discharges should be disinfected.

Contacts should be quarantined in barracks, or preferably in a quarantine camp, and be inspected twice daily by a medical officer. Special attention should be given to detecting Koplik spots and early rises of temperature as determined by the thermometer. Men showing a rise of temperature up to 100° should be isolated. Daily airing of barracks and sunning of bedding should be practiced in "contact" barracks for measles, and also for all of the below-mentioned infectious diseases.

Closure of assembly halls, exchanges, etc., may be necessary in severe epidemics of measles and other serious infectious diseases.

(*b*) *German measles.*—The same precautions should be taken as for measles. Every effort should be made to correctly diagnose German measles with a view to preventing cross infection with measles.

(*c*) *Pneumonia.*—This disease is to be regarded as communicable. It should be determined in every case whether the disease is primary or secondary to measles or scarlet fever, and records should be classified accordingly. Careful cleansing of the floors should be practiced in a barrack where pneumonia has developed. Special attention should be given to sunning the patients' bedding and clothing. Ample ventilation and the widest separation of the heads of adjacent sleepers should be insisted on.

(*d*) *Diphtheria.*—Early culture of suspicious throat conditions seen by regimental surgeons should be insisted on. Contacts with a case of diphtheria should be quarantined until it is shown by both nose and throat cultures that they are not carriers. All close contacts shown by the Schick test to be nonimmune should be promptly immunized by means of antitoxin. Articles which have been in contact with the patient and articles soiled by discharges should be disinfected.

(*e*) *Mumps.* Cases should be isolated and special care taken to detect incipient cases. No quarantine is recommended, but immediate contacts may be segregated if deemed necessary.

(*f*) *Scarlet fever.*—Contacts should be quarantined for seven days and examined twice daily by a medical officer, particular attention being directed to the throat. All articles which have been in contact with the patient in barracks or tent or with his discharges should be disinfected.

(*g*) *Smallpox.*—The virus is believed to be present in all body discharges, including the feces and urine. It may be carried by flies. It probably persists till all crusts have disappeared. Prompt and widespread revaccination of contacts, including at least the entire company, should be practiced. Quarantine of contacts in unnecessary, except in case of new troops, when there is doubt as regards successful original vaccination, but all contacts should be inspected twice daily for a period of two weeks, special attention being given to the mouth and to rises of temparature.

(*h*) *Cerebrospinal meningitis.*—For purposes of carrier examinations to be made after the occurrence of a case of epidemic cerebrospinal meningitis, the word "group" should be taken to mean—

First. Other members of the same squad or tent.

Second. All other men in the same room.

Third. All other men in the same building or company.

In other words, the examination should be extended in increasing circles about a case as rapidly as time and laboratory facilities permit. While such examinations are being made on the smaller group, the largest group should be treated as potential carriers. All men in the largest group should be quarantined and prevented from mingling, as individuals, with others within or without the camp; they may, however, be permitted to attend drills and other formations as a unit. In the meantime, sprays and gargles may be used. Whenever it is impractical to culture the larger units at once, the inauguration of spraying need not be delayed. If spraying is employed, it should be timed so that it falls as closely as possible to the hour of retiring, thereby diminishing the chances for droplet infection during the night. When practicable, a second culturing of the largest group is advisable; this to be carried out after the removal of any contacts found at the primary culture.

All carriers, as rapidly as detected, are to be removed from the building and isolated in a quarantine camp until free from meningococci on three consecutive examinations, with intervals of from three to six days between examinations. On completion of the examinations and removal of the carriers the quarantine may be raised.

11. From time to time the epidemiologist may report to this office, through the division surgeon, attention Major Vaughan, such observations as are of interest in regard to the prevention and spread of communicable diseases. Among the points of particular interest to this office may be mentioned the following:

(*a*) Relationship between bronchitis and pneumonia, measles and pneumonia, and septic sore throat and pneumonia.

(*b*) Influence of exposure to cold on incidence of pneumonia, especially during convalescence from measles.

(*c*) Influence of length of convalescence in measles on subsequent incidence of pneumonia.

(*d*) The best methods of limiting the spread of pneumonia in camps.

(*e*) Is the raw recruit specially susceptible to meningitis and pneumonia; and if so, why?

(*f*) Influence, if any, of gas masks on spread of infectious diseases.

(*g*) Influence of housing conditions on incidence of measles, pneumonia, and meningitis.

(*h*) The influence of rural and urban residence on development of measles, pneumonia, and meningitis.

(*i*) To what extent is epidemic disease due to transfer of troops from one camp to another.

(*j*) Recommendations which may be of use in preventing the development and spread of communicable diseases among men in future assemblies of troops.

12. The above instructions in no wise relieve the division surgeon from the responsibility of prescribing such other measures as in his opinion are necessary to limit the development and spread of communicable diseases.

[Extract No. 1.]

2. A detention camp should be established for each camp and cantonment, where all fresh contingents of men will be held under observation for at least two weeks, or longer if considered necessary by the division surgeon, before being assigned to organizations in general camp. The purpose of the detention camp is the observation of new men for a certain period to prevent the introduction of communicable diseases into the nonaffected camp or cantonment from without. No new men should be placed in the general camp until in the judgment of the division surgeon it is safe to do so. The capacity of the detention camp should be such that it will accommodate the full quota of each contingent expected to complete the organization of the division. The period of detention should be utilized for physical reexamination of the men, the vaccination and immunization against typhoid and paratyphoid fevers, and such equipment and training as may be prescribed by the camp and cantonment commanders without bringing the men in detention camp into contact with other men of the division.

3. A quarantine camp should be established in each camp or cantonment by the camp or cantonment commander when a command is already infected with a communicable disease. This camp is to serve the purpose of segregation of contacts or carriers of these diseases and permit of intensive search for and treatment of carriers during the period of infectivity. The required capacity of the quarantine camp will depend upon the degree of infection of the command, and will be determined by the camp or cantonment commander after consultation with the camp or cantonment surgeon.

[Extract No. 2.]

1. *National Army cantonments.*—It is recommended that detention and quarantine camps be composed of wooden huts, each 20 feet by 20 feet, having a capacity of eight men. Kitchens should be provided, but no mess halls are necessary, as it is contemplated that the men eat either out of doors or in inclement weather in their individual huts. Lavatory, bath, and toilet buildings for each 250 men would be required. Near each kitchen should be constructed an open shed with water and sewer connections, where mess kits can be washed. Quarters for officers, sotrehouses, administrative offices, and a regimental infirmary building at the rate of 1 for each 2,000 men will be required for each detention camp. These accessory buildings will not be required for the quarantine camp. The required capacity for the detention camp will depend on War Department plans as to the number of men to be ordered into cantonments within each two weeks' period. This information is not available in this office, and the required capacity for the detention camp can not be estimated. For the quarantine camp, a minimum capacity of 1,000 should be provided for each National Army cantonment, with available space for expansion if required.

2. *National Guard and other camps.*—It is recommended that detention and quarantine camps for National Guard and other camps be made up of huts the same size and capacity as recommended for National Army cantonments or framed and floored tents. The hut construction is considered preferable. Latrine buildings, kitchens, and dish-washing sheds will be required. In the detention camp, the required capacity will depend on the maximum number of men expected at the camp in a single contingent. For the quarantine camp, a minimum capacity of 1,000 men should be provided with space available for expansion of this nucleus required by epidemic conditions.

3. There should be a wire fence about each detention and quarantine camp.

(*Cir. Memo. from the Surgeon General, January 8, 1918.*)

Prophylactic Treatment of the Respiratory Tract.

1. Reports from abroad and from this country indicate that great good has been accomplished in infectious diseases and in catarrhal conditions of the respiratory tract by so-called toilet of the mouth, nose, and throat. Treatment has been directed against inflammatory conditions of all kinds, with focal infections in the tonsils and sinuses. Sprays, gargles, and steam-room inhalations have been effective in cleaning up carriers and curing inflammatory conditions which have predisposed to more serious types of infection and transmission of disease to others. The cases to be given prophylactic treatment are cases suffering from infectious disease with the inflammatory condition of the air passages, chronic inflammatory condition of the nose, throat, and sinuses, severe grippes, and colds. The solution of the question as to how much can be accomplished by systematic prophylactic treatment in diminishing infections of the nose, throat, and bronchii is one of the most pressing now confronting the medical officers of the various cantonments.

2. It is directed that all patients ill with an infectious disease be required to wear a gauze mask during the active stage of the disease and for two weeks of the convalescence. This applies especially to measles. The probem of checking the spread of infectious diseases is considered of paramount importance. A report bearing on this problem will be issued shortly.

(*Cir. Letter, Surgeon General's Office, March 22, 1918.*)

The Control of Respiratory Infections and Communicable Diseases in Hospitals.

(*a*) Many communicable diseases such as pneumonia, meningitis, pertussis, diphtheria, tonsillitis, measles, scarlet fever, German measles, are transmitted from one person to another by means of secretions of the nose and mouth. Coughing, sneezing, or talking conveys the bacteria-laden droplets of mucus or the virus through the air. By this means the infection may be directly transmitted from one individual to another; or should this contaminated material from the nose or throat soil the floor or articles of furniture through drying, the infection may be spread indirectly by dust.

(*b*) If proper methods are devised to control the direct or indirect dissemination of infection it would be possible to prevent the spread of respiratory infections and the cross infections that may occur in highly communicable diseases.

With this object in view, attention is directed to the following recommendations:

The most efficient method to prevent dissemination of nasal and oral secretions is to cover the nose and mouth with two layers of thin gauze. The mask can be considered as a form of individual isolation.

The mask is a simple square of two layers of gauze, with a tape sewed to each of the four corners. The masks should not be worn after they have become wet. They should then either be boiled or soaked in some disinfecting solution, washed, and sterilized, like surgical dressings in the autoclave.

Under the following conditions all patients should be masked—

(1) *In the ambulance.*—Since patients suffering from different communicable diseases may be transported, under necessity, in the same ambulance at the same time or at different times, the danger of primary and of crossed infections is always present. Consequently, at the time he designates the patient to be removed by the ambulance, the regimental surgeon should also indicate whether or not that particular patient should be masked for the protection of others in the same ambulance.

(2) In the receiving ward patients should remain masked or be remasked until it is determined that they have no infection of the respiratory tract or communicable disease. All suspicious cases should remain masked until they are placed in bed in cubicles.

(3) In the ward bed patients suffering from respiratory infections and communicable diseases in cubicles need not be masked. When for any purpose they leave their bed and its cubicle, a mask should be worn.

The following rules should be observed for the conduct of patients in wards for respiratory and communicable diseases:

1. A face mask must be worn continuously by all patients when out of cubicle.
2. In the latrine the mask may be removed only by permission and under the direct supervision of ward nurses.
3. Washbasins and bathtub are not to be used. For washing face and brushing teeth use running water over sink. Shower may be used under supervision. Use only liquid soap from container.
4. Only one patient will be allowed in the wash room at one time. Remove mask on entering and replace before leaving wash room.
5. Masks may be removed when patients are in bed.
6. Sheets between beds are not to be drawn back.
7. Corps men, nurses, and surgeons should wear masks and gowns when on duty in the ward. A guard should be on duty continually near the wash room.
8. All eating utensils should be sterilized after each meal.
9. It will be of advantage also to instruct ward surgeons and ward masters to explain clearly and frequently to the men the purpose of the masks.

(*Cir. No. 1, Surgeon General's Office, March 25, 1918.*)

Care of Chronic Meningitis Carriers.

1. It is the present intention of the Medical Department to take care of all chronic meningitis carriers that are found in the military personnel until it is determined that they may be discharged without menace to the civil communities. No such individuals should be recommended for discharge from the service without authority from this office.

2. If any meningitis carriers have been discharged from your cantonment in the past, notification of the names and addresses of the persons so discharged should be forwarded by you to the proper State health authorities, with statement that persons so named are meningitis carriers. Similar information should be furnished to the Surgeon General, United States Public Health Service, Washington, D. C.

3. In the event of discharge from the service by reason of tuberculosis, trachoma, leprosy, Malta fever, yaws, mycoses, or other chronic infectious diseases, notification of name, address, and cause of discharge should be furnished as provided in paragraph 2. Similar action will be taken in case of discharge of a soldier by reason of being a carrier of typhoid or paratyphoid bacilli, diphtheria bacilli, or amebæ.

(*Cir. Memo. from the Surgeon General, April 16, 1918.*)

Disinfection of Shaving Brushes Against Anthrax.

1. The occurrence of a number of cases of anthrax, traced to shaving brushes, makes it advisable to disinfect all new brushes before they are sold by the post exchange or issued to troops by the quartermaster. You should, therefore, make recommendation to your commanding officer without delay to secure this action.

2. The following procedure has given satisfactory results:

(1) Five per cent solution of any one of the following for several hours:

(*a*) Liquor cresolis compositus.

(*b*) Three cresols, Mulford.

(*c*) Trikresol, Schering.

(*d*) Cresol, Mallincrodt.

(*e*) Phenol, crude.

(2) Followed by heating in the solution to 90° C. in a water bath for two hours.

(3) Then let stand at room temperature in the same solution for 48 hours.

(4) And, finally, wash and dry in the sunlight.

3. This method has given satisfactory results without destroying the brushes.

4. Measures are being taken which will in the future secure a better product from the factories now making shaving brushes, but until you receive official notice that the new brushes have been accepted as satisfactory by the Federal Government you should continue to disinfect.

(*Cir. Letter, Surgeon General's Office, July 2, 1918.*)

Anthrax.

1. I am directed by the Surgeon General to inform you that the number of cases of anthrax being reported to this office is sufficient to attract attention at this time. Anthrax, so far as reported, has without exception appeared on the face or neck, and shaving brushes have fallen under suspicion, and in some cases anthrax organisms have been isolated from them. For this reason it is necessary that each case of anthrax coming to your attention be examined critically; that the man's shaving brush, talcum powder, and other shaving accessories be obtained; that the organism be sought for with great thoroughness. For the purpose of testing brushes, it is recommended that inoculations of bristles from the brush be made into rabbits, guinea pigs, and rats; nothing short of this may give conclusive results. Report should be made to this office of each case, giving the clinical history, the etiology, the results of the examination of supposedly infected material. The shaving brush or other article from which the anthrax bacillus may be isolated must also be forwarded to this office with full information as to its source, name of the maker, and other data to facilitate its identification.

2. Attention is invited to circular letter of July 2, 1918, on the disinfection of shaving brushes.

(*Cir. Letter, Surgeon General's Office, July 6, 1918.*)

Shaving Brushes and Anthrax.

1. The United States Public Health Service has notified this office that shaving brushes made by the following-named manufacturers may be accepted as free from anthrax. This applies to brushes already purchased and in storage as well as to brushes which may be purchased in the future from these firms. No further disinfection of brushes made by these manufacturers is necessary. The names of additional manufacturers will be furnished as soon as reported upon by the United States Public Health Service. A copy of this notice has been furnished the Quartermaster General's Office.

The Ever Ready Safety Razor Co., 303 J Street, Brooklyn.
Kip Brush Co., 449 Greenwich, Manhattan.
The J. L. Erskine Co., 462 Greenwich, Manhattan.
Leopald Ascher, 118 Sixth Avenue, New York.
Henry M. Rinehart, 17 Fulton Street, Brooklyn.
J. C. Pushee & Son Co., Boston, Mass.
John J. Whiting & Adams Co., Boston, Mass.
Rubberset Co., Boston, Mass.
E. Quinton Co., Philadelphia, Pa.

(*Cir. Letter, Surgeon General's Office, July 20, 1918.*)

Disinfection of Shaving Brushes for Anthrax.

1. The circular on this subject dated July 2, 1918, is recalled and the following is substituted therefor. Except as provided for in our circular of July 20, listing certain factories which have been approved by the United States Public Health Service, all new shaving brushes before they are sold by the post exchanges or other agencies or issued to troops by the Quartermaster Corps should be disinfected, according to the following method: The brushes should be immersed for

a period of at least four hours in a 10 per cent solution of formalin, which gives a concentration of formaldehyde of approximately 4 per cent, and the solution should be maintained at a temperature of not less than 110° F. for the entire time. The brushes should be immersed and stirred to secure a thorough penetration of the fluid.

2. The temperature used in this method is less than the melting point of the glue which is used in some brushes, and should therefore do no harm to the brushes.

(*Cir. Letter, Surgeon General's Office, July 22, 1918.*)

Experience of Medical Officers in the Diagnosis of Communicable Diseases, Especially the Exanthemata.

1. It has been demonstrated that only a small proportion of the medical officers in the base hospitals have had experience in the diagnosis of the communicable diseases, especially the exanthemata, before entering the service. A considerable number have acquired the experience since being in the service. Others either have not had the opportunity in the service or have not been capable of availing themselves of it.

2. In choosing the personnel of base hospitals for this country and for overseas duty, and also for evacuation hospitals, it is desirable that there should be assigned to each one a certain number of medical officers who are expert in the diagnosis and treatment of the exanthemata.

3. You are, therefore, requested to send to this office the names of those medical officers who have had especial training in these diseases before or after entering the service, with a statement as to what this training has been. So far as it is possible, it is requested that this information be furnished also regarding those who have had service in your base hospital, but have been ordered elsewhere.

(*Cir. Letter, Surgeon General's Office, August 16, 1918.*)

Care of Communicable Diseases.

1. The attached copy of a memorandum for the Hospital Division of this office, made by an officer after an inspection of certain base hospitals relative to the care of communicable diseases, is submitted for your information and guidance.

MEMORANDUM FOR HOSPITAL DIVISION.

1. The incidence of the communicable diseases (measles, mumps, meningitis, pneumonia, etc.) is very high among the troops freshly inducted in the service. From ignorance or other motives they frequently do not report sick at sick call and as a result of this there may arise serious delay in the entrance of a sick man into the hospital. To obviate this, it would be advisable, wherever it is possible, that a rapid examination of these troops should be made at a roll call held twice a day, as it is frequently possible to recognize evidences of sickness by superficial examination. This examination could be held in the depot brigade or in whatever barracks was set apart for lodging the incoming troops.

2. Owing to the fact that isolation in the regimental infirmaries is impossible and that continuous observation and particular therapy very difficult, it is advisable to arrange that, with the consent of the division surgeon, cases be kept as short a time as possible in the regimental infirmaries and that all patients obviously seriously ill be sent at once to the base hospital.

3. Patients in whom there is a suspicion of infectious disease should wear face masks and should be sent to the base hospital in separate ambulances unless there be several suffering from the same disease, when they may be sent together.

4. No patient with a suspicion of infectious disease should be sent at once to a ward. All should go through the examining system for communicable diseases in the receiving ward.

5. The medical officer assigned to the reception ward should at all times be one who is expert in the diagnosis of the communicable diseases. He should examine all patients stripped.

6. Those patients in whom an accurate diagnosis is possible should be sent at once to the building assigned for that disease. Those patients in whom the diagnosis is still uncertain are to be sent to the wards fitted with observation booths or to one of the rooms in the isolation buildings. These patients are to remain thus isolated or are to be transferred to the proper building if the diaagnosis becomes plain.

7. Patients are to be kept masked until placed in bed in the observation booth or the isolation building.

8. Physicians, nurses, and attendants engaged in the treatment of patients with communicable disease, or suspected of having communicable disease, should wear large masks of cheese cloth, covering the mouth and nose, as well as caps and gowns.

9. All utensils should be sterilized by heat, after washing, if this is possible; if not, by some appropriate method.

Thermometers should be wiped off with cotton, washed with soap in running water and after this placed for several minutes on cotton in a flat dish covered by bichloride solution 1–1000, or cresol solution.

10. The latrines in the observation ward should be used by only one patient at a time. Patients should not be allowed out of the observation booths unless allowed to go to the latrine.

11. No visitors should be allowed in the observation wards except with the special permission of the ward surgeon.

12. If the wards provided for the observation of doubtful cases should be insufficient for the purpose, a similar form of isolation may be secured by the use of sheets strung upon wires.

(*Cir. Letter, Surgeon General's Office, August 29, 1918.*)

Control of Acute Respiratory and Other Diseases.

1. The following suggestions regarding control of the acute respiratory and other diseases usually conveyed by discharges from the respiratory tract are submitted for the information and guidance of responsible medical officers. These suggestions are not to be interpreted as supplanting existing regulations.

2. The acute respiratory and other diseases usually conveyed by discharges from the respiratory tract were responsible for the majority of the deaths from disease in camps and cantonments during the winter of 1917–18, and the probabilities are that this will hold for the coming winter. Under this heading are included pneumonia, meningitis, measles, mumps, diphtheria, tuberculosis, bronchitis, tonsillitis, and scarlet fever.

3. A careful study of these diseases during the past winter has given certain definite information regarding their relevance and the causes therefor, and it is desired that the information thus gained be intelligently applied in attempts to limit their spread in the future. This is the purpose of this memorandum.

4. The diseases of this group are disseminated for the most part by direct transference from the respiratory organs of one individual to the corresponding organs of another. The distributor may be well or sick. The transfer is usually made in the spray thrown from the mouth or nose of the "carrier" in talking, coughing, sneezing, or spitting. Less frequently the transfer is more indirect, such as from the use of the common drinking cups and in dust. With these facts in mind, the importance of instructing officers and men as to the danger of talking, coughing, or sneezing directly into the faces of comrades will be greatly appreciated. Further, men should be instructed as to the danger of indiscriminate spitting and as to the sanitary importance of keeping their bodies and personal belongings from too close contact with others, well or sick.

5. Pneumonia caused more deaths last winter than all other diseases combined, and in all probability it will be our most potent enemy in the camps during the coming winter. Every effort must be made to reduce both the morbidity and mortality. The most patent failure of medical officers during the past winter was in the early recognition of this disease. In one camp out of 485 cases only 55 per cent were diagnosed within the first three days, 27 per cent from the fourth to the sixth day, and 18 per cent were not recognized until the seventh day or later. When the disease is not recognized until the later stages have been reached, treatment is not likely to be efficient. Special instruction should be given to medical officers in the early recognition of this disease, and every suspicious case should be sent to hospital promptly. The fact that rural and southern men are especially susceptible to pneumonia, and measles as well, stands out plainly. The colored race is particularly susceptible.

6. During the past winter pneumonia was caused by the pneumococcus of the different types and by the streptococcus hemolyticus. Both of these organisms have caused both lobar and broncho pneumonia, the former being the most prevalent in most camps—not in all—and the latter more fatal. Empyema has been a serious complication in both forms of pneumonia. The bacteriological study of pneumonia should be continued with the greatest diligence and care during the coming winter. While the pneumonia curve has fallen during the summer months, the disease continues not only to persist in every camp but remains on the whole the cause of the greatest number of deaths, and with the approach of winter the curve of this disease may be expected to rise.

7. Recent, but limited, experience offers promise of aid in the restriction of pneumonia by means of direct vaccination. The purpose is to cautiously extend this experience during the coming months.

8. There is reason for grave apprehension concerning meningitis during the coming winter. This disease prevailed at every camp last winter, but became epidemic only in Camps Jackson, Beauregard, and Funston, the men in general coming from areas in which this disease was endemic. During the present summer, while there has been no alarming outbreak, meningitis is widely distributed, being reported in every section of the country. Next winter many of the camps

will be recruited, not especially from certain States, but with the men from widely separate localities. This will make the control of meningitis in camps more difficult.

9. When measles appears in an organization the sick man should be masked and sent directly to hospital without delay; all "contacts" should be carefully inspected twice daily during the incubation period of the disease. At these inspections the men should be stripped to the waist and the inspection should include the skin, eyes, mouth, nose, and throat. The detection of a suspicious eruption, conjunctival congestion, or coryza demands that the man be sent at once to hospital or to a suitable place for proper isolation and observation.

10. The following facts have been determined with reference to the prevalence of scarlet fever in all camps during the past winter:

(*a*) Camp Pike had by far the most cases. This was followed in order by Camps Lewis, Kearny, Sherman, Dodge, and Grant. Then follow camps in which the incidence of this disease was low, ending in Camps Beauregard and Wheeler without a case.

(*b*) Camps made up largely of southern men had but little scarlet fever. (About one-third ot the troops at Camp Pike were northern men.)

(*c*) There was three times as much scarlet fever in National Army as in National Guard camps It is believed that this was due to the more frequent accessions from civil life in the former.

(*d*) It is possible—indeed, highly probable—that differential diagnoses were not always correctly made and that cases of this disease and of measles were sometimes mixed in wards and crossed infections occurred. There should be in every camp medical officers especially skilled in the recognition of exanthemata. All new arrivals should be carefully watched, and, on account of the relatively short period of incubation, most cases should be detected before assignment to organizations.

11. During the past winter deaths from diphtheria occurred in 7 out of the 29 camps studied. Camp Pike heads the list with the following order: Camps Funston, Dodge, Cody, Custer, Doniphan, and Logan. Present instruction covers the proper handling of cases of this disease, which include sending the case to hospital, the culturing of "contacts," and quarantine of "carriers." The "contacts" should be "Schicked" and positive and suggestive "Schicks" carefully observed and promptly given proper doses of antitoxin (if symptoms of the disease develop).

12. The information gained concerning the relation between pneumonia and previous respiratory diseases, such as measles, bronchitis, tonsillitis, etc., is not yet satisfactory, and it is to be hoped that these matters will receive more attention in the future. There is also great need of exact knowledge concerning the relation between the weather and pneumonia. As has been stated, the curve of this disease has fallen to an annual admission rate of about 10 per thousand during the summer, but it remains the most serious disease in the camps, and from time to time exacerbations occur.

13. The inadequacy of sick call in the early recognition of communicable diseases is evident. When an organization is infected, medical officers should inspect every man in the organization at least once a day and should be on the alert for the recognition of each communicable disease in its earliest stages. Each case of communicable disease should be sent to hospital as soon as detected, and medical officers should be graded on their skill and success in the early detection of these diseases. During the past winter the death rate in the different camps was in inverse ratio to hospital admissions.

14. The retention and treatment of sick of organizations in regimental infirmaries or in quarters should not be encouraged. A soldier with a temperature above 100° should be considered as sick, and as such sent to the hospital unless there is an easily explainable cause for the temperature which is known to be temporary and not connected with the onset of one of the communicable diseases. Regimental medical officers should be instructed to send suspicious cases to hospital without waiting to make a definite diagnosis. It is far better to have a high admission rate than a high death rate. Medical officers should be instructed that the occurrence of a chill or sudden fever and malaise may often be the only sign of a beginning pneumonia, and that such symptoms, if unexplained, demand the prompt transfer of the patient to hospital.

15. The cubicle has proven of value in the restriction of the acute respiratory diseases, and its use should be extended to every bed in the hospital where coughing patients are being treated, and when possible to beds in barracks in which the halves of shelter tents might be used. The employment of masks in hospitals has apparently been of protective value. and their use should be extended to known "carriers." Great care should be taken to prevent cross infections, especially in admitting wards of hospitals. It is desirable that the admitting officer should be expert in exanthemata or have such a specialist always available.

16. State health officials have been requested to keep camp and division surgeons informed of the existence of communicable diseases within their respective jurisdictions. This information should be utilized in receiving men from infected places and in granting men furloughs to their homes. Responsible medical officers should use every endeavor to protect the men of their command from infection not only from within but without the camp.

17. Recent arrivals in camp should be inspected twice daily. Most alert medical officers should be charged with this duty. The mouth, nose, and throat in new arrivals should be carefully inspected. In suspicious cases cultures should be made. Instruction in the hygiene of the mouth should be given and treatment by a specialist, including dental service, should be provided when needed.

18. It is the experience of last winter that the importation of southern troops into northern camps was followed by increased morbidity in both the arrivals and the troops already at the camp. In several instances the type of the dominant pneumonia was changed after the arrival. Accessions from civilian life quite invariably introduced and intensified infections. These facts emphasize the necessity for a detention camp and its proper functioning. Most competent and alert medical officers should be in medical charge of detention camps where such have been established.

19. Further information is desired concerning the relation between pneumonia and intestinal parasites, if there be such relation. Studies should be made in each camp along these lines.

20. In 13 out of 29 camps studied last winter, the death rate was below that of the same age group at home, and in 6 out of 13 it was not more than half of the home rate. It is to be hoped that with the aid of past experience the death rate in our camps and cantonments may still further decrease during the coming winter, and with this purpose in view the aid and cooperation of every medical officer on duty with troops and in hospitals is necessary.

(*Cir. Memo., Surgeon General's Office, for camp and division surgeons, etc., September 6, 1918.*)

Control of Epidemic Influenza.

1. Inasmuch as an epidemic wave of influenza is sweeping over certain parts of the United States, and threatens to involve many of the camps and cantonments, it is important that the essential facts in regard to the nature and prevention of the disease be more generally understood.

2. The disease now epidemic is believed to have been imported from Europe, where it has been prevalent in various countries. Popularly called "Spanish influenza," there is nothing about it to indicate any departure from the influenza which has been prevalent in the United States from time to time for many years and was last seen here in Army camps and cantonments in the spring of 1918.

3. No disease which the Army surgeon is likely to see in this war will tax more severely his judgment and initiative. It will be wrong, on the one hand, to propose such measures of prevention and treatment as will interfere unduly with the rapid training of the men, and, on the other hand, make so light of the disease as to increase the sick rate from the more serious diseases with which the influenza is associated.

4. It is important that influenza be kept out of the camps as far as practicable. To this end it must be recognized as a disease which is distinct and separate from the so-called "Cold, bronchitis, laryngitis, coryza, or rhinitis, and fever, type undetermined," which are continually with us and from time to time become prevalent. The influenza which is now epidemic is not a part of, or cause of, or the consequence of these diseases. It is a specific infection with a characteristic symptom-complex.

5. The leading symptoms are: Severe headache; chills; or chilliness; pains in the back and legs; temperature sometimes as high as 104; great prostration; drowsiness. Occasionally there are nervous symptoms; sometimes, but not always, the eyes and the air passages of the nose and throat are affected; there may be gastrointestinal disturbances. The onset is sudden. The bacteriology is not definitely established. Often the Pfeiffer bacillus can be isolated. The most fatal complication is pneumonia. In most instances the patient recovers in three or four days, but is entirely incapacitated for duty while the attack is at its height. In a certain proportion of cases convalescence is slow, asthenia being a prominent symptom. Relapses may occur.

6. Upon the appearance of influenza in camp, special provision should be made for ample hospital accommodations for these patients. Owing to the great infectivity of the disease, sole reliance should not be placed upon cubicles and masks for isolation. It is needless to say that

surgeons, nurses, and attendants should use every precaution against becoming infected themselves and from carrying virus to others.

7. There are few diseases so infectious as influenza. The virus is contained in the discharges of the nose and mouth and is given off in the acts of sneezing, coughing, speaking. The hands and whatever else may become contaminated by the discharges can carry the virus and produce new cases. It is probable that patients become foci of infection before the active symptoms develop and remain so after the active symptoms subside. Influenza is a disease which is often produced by carriers.

8. Coughing, sneezing, and coryza should not be regarded as infallible signs of influenza. Their significance lies in a means which they produce for the contamination of the air and of objects in the vicinity with whatever virus the mouth, nose, and throat contain. Coughing and sneezing play an important part in spreading meningitis, tuberculosis, and probably all the exanthematous and respiratory diseases. Some restriction should be placed on these acts. Where coughing and sneezing can not be avoided, it is usually possible to cover the face with a handkerchief or cloth, or withdraw from the immediate company of others until the paroxysm is over. The handkerchief or cloth should be burned or frequently washed, and kept closely rolled meanwhile.

9. As in all contagious diseases, the measures to be followed for the prevention of influenza depend upon the early detection and isolation of the sources of infection. Epidemics of the disease can often be prevented, but once established, they can not well be stopped. They can be mitigated by segregating the most active sources of infection, and by keeping the well away from the sick.

10. When epidemic influenza is believed to be in the neighborhood of a camp, restriction should be placed upon the intermingling of the men with the civilian population; they should be kept from frequenting crowded places of assembly; all places of amusement and post exchanges should be closed; the use of crowded vehicles for transportation should not be permitted. If the disease appears in camp, intercommunication between different parts of the camp should de prevented.

11. Reliance should not be placed upon sick call as a means of discovering the early cases. As in all epidemic infections, the surgeons should seek the disease and not wait for the disease to seek them. Inspection should be had twice a day and visits should be made to the barracks at unexpected hours to detect sick men who otherwise would not be reported. Mild attacks frequently lead to severe ones.

12. During an epidemic every case of fever which is not otherwise satisfactorily explained should be regarded as probably influenza. After a little practice, influenza patients can very often be detected by the peculiar, expressionless aspect of the face.

13. Epidemics of influenza are characterized by sudden onset, large number of cases, and short duration. In any place they sometimes run no longer than two weeks; they rarely continue for longer than two months. Some mild and unusual cases make their appearance toward the end.

(*Cir. Memo., Surgeon General's Office, for Camp and Division Surgeons, etc., September 24, 1918.*)

Personal Defense Against Spanish Influenza.

1. It is desired that the following 12 suggestions for avoiding influenza be given all possible publicity in your camp, by placarding and other proper means of bringing it to the attention of the command.

HOW TO STRENGTHEN OUR PERSONAL DEFENSE AGAINST SPANISH INFLUENZA.

1. Avoid needless crowding; influenza is a crowd disease.
2. Smother your coughs and sneezes; others do not want the germs which you would throw away.
3. Your nose, not your mouth, was made to breathe through; get the habit.
4. Remember the three C's—a clean mouth, clean skin, and clean clothes.
5. Try to keep cool when you walk and warm when you ride and sleep.
6. Open the windows—always at home at night; at the office when practicable.
7. Food will win the war if you give it a chance; help by choosing and chewing your food well.
8. Your fate may be in your own hands; wash your hands before eating.
9. Don't let the waste products of digestion accumulate; drink a glass or two of water on getting up.
10. Don't use a napkin, towel, spoon, fork, glass, or cup which has been used by another person and not washed.
11. Avoid tight clothes, tight shoes, tight gloves; seek to make nature your ally not your prisoner.
12. When the air is pure, breathe all of it you can; breathe deeply.

(*Memo., Surgeon General's Office, for camp and division surgeons, September 27, 1918.*)

Control of Communicable Diseases.

1. Attention is invited to memorandum from this office, dated January 1, 1918, relating to procedures for the control of communicable diseases in camps and hospitals. If this memorandum is not on file and available, application will be made to this office without delay and a copy will be furnished.

2. The memorandum referred to will be strictly observed, and its requirements as to the care of measles patients will be applied to influenza as well. The greatest danger in influenza epidemics lies in overcrowding hospital wards and barracks with influenza patients, which increases the incidence of pneumonic complications.

3. Any apparent contradictions or modifications in its provisions appearing in subsequent circulars from this office are hereby revoked. Responsible medical officers will be held strictly accountable that its provisions are carried out so far as possible with facilities at hand and procurable.

(*Cir. Memo., Surgeon General's Office, September 28, 1918.*)

Method of Handling Influenza Epidemic at a Camp.

1. The attached report of a sanitary inspector from this office is furnished for your information, first, as showing the steps taken at one camp to handle a serious situation in a very satisfactory manner, and secondly, the recommendations for further improvement made by an inspector.

2. In epidemics of influenza every effort should be made to avoid overcrowding of the uncomplicated cases with a view to forestalling complications. At least 100 square feet of floor space per man should be provided, and all the precautions used which are prescribed for measles in memorandum this office January 1, 1918.

3. Prior to the development of epidemics of influenza, camp surgeons should consult with the camp commander with a view to laying out an extensive scheme for evacuating barracks and using them for hospital purposes.

4. The camp surgeon should take steps to keep himself informed as to the sanitary situation at the base hospital, and should endeavor to prevent overcrowding of that institution if other buildings or tentage can be obtained to shelter the sick.

REPORT OF INSPECTION IN RELATION TO EPIDEMIC OF INFLUENZA AND PNEUMONIA AT ...., MADE SEPTEMBER 28, 1918.

1. The strength of the command is 51,177, of which number 5,934 are colored. There is no overcrowding, and for some time there has been none, except possibly in isolated instances temporarily. Barracks are marked on basis of 45 square feet floor space per man, and the number of occupants is in practically every instance much below the allowance, so that over 50 square feet is provided each man. In the depot brigade from 12,000 to 15,000 men are kept under canvas, five men to a tent. In the division men have been put under canvas when necessary to reduce overcrowding in barracks. Men sleep with head and feet alternating, and in many barracks the "cubicle system" is in use by means of shelter tents suspended between the beds.

2. Fires have been started in all buildings and the freest possible ventilation is enforced. Beds, bedding, and clothing are put outdoors all day, weather permitting. Tents are furled daily. All floors have been reoiled once and in some instances twice since epidemic started. Overcoats and woolen underwear have been issued. There is ample bedding. Men are kept outdoors practically all day. An officer is on duty in each barrack day and night.

3. Police of camp and barracks is excellent. Messes very clean. Ample steps have been taken for fly eradication, and flies are rarely seen in messes. Dishes are boiled after each meal. Where individual mess kits are used, they are washed in boiling water after each meal, and are actually boiled at intervals. There are no common drinking cups in use.

4. There is still much dust in the camp, and during the afternoon of my visit the air was filled with it. Part of the camp has been treated with "Dustex Gluteen," which appears in every way superior to oil in allaying the dust nuisance. Enough of the material can not be obtained to finish the work. The epidemic of influenza is said to have started promptly after a severe dust storm.

5. Absolute quarantine of camp against adjacent territory, and vice versa, has been in force some days, except that relatives of severely ill are admitted and visit the hospital, wearing masks. Interorganization quarantine was in force until the epidemic became so general that it was deemed useless. All large assemblies have been prevented, but the regimental Y. M. C. A. entertainments have been allowed to go on with a man in every other seat. The sale of food in post exchange has been suspended and this has greatly reduced crowding therein. It was felt that absolute suspension of entertainments and of exchange privileges would be so detrimental to morale, already somewhat shaken, that the disadvantages would more than counterbalance the advantages.

6. There is ample cooperation on the part of the line officers. Men experienced in nursing have been drawn from all organizations in camp. Line officers in barracks are constantly on watch

for new cases and see that men are properly cared for. Medical officers visit all barracks at least twice a day.

7. Throughout the camp a part of each barrack, generally one room, has been set aside for the care of suspected cases of influenza and the mild cases. The men are cubicled in many instances, and masked in many others. The keeping of these cases in barracks, where more or less contact with the well is inevitable, is believed to be a serious mistake. These men were carried as "sick in quarters."

8. In the barracks frequent temperatures were being taken by medical and line officers and by enlisted men. The methods for disinfecting the thermometers in some instances appeared inadequate.

9. In all barracks and tents containing sick men, paper receptacles, usually pasteboard ice cream plates, had been bought to use as bedside sputum cups. These were collected and burned at intervals. It had been ordered that a piece of newspaper be kept on the floor under each plate, but this was not done in all cases.

10. In the tent area of the depot brigade 36 pyramidal and store tents had been set aside as an infirmary, and all suspected and mild cases were removed thereto. There were enough medical officers and attendants, and an ample supply of spit cups and commodes. The sick were neither cubicled nor masked. All were given food six times a day. The sanitary conditions of the entire tented area in the depot brigade were exceptionally good.

11. Two thousand negroes who arrived at the camp from civil life between two to five days ago were put in an area by themselves and absolutely quarantined. The guard was most efficient and no officer or enlisted man could pass through without proper credentials. No influenza has occurred among these men.

12. All but three motor ambulances had been sent away from the camp at the time the epidemic began. The mule ambulances were entirely inadequate. Efforts to obtain ambulances and delivery wagons from an adjacent city have thus far been unavailing. Fifteen motor busses, which had been put out of business when the camp quarantine went into effect, were commandeered, and this action has fairly well solved the transportation proposition.

13. Owing to the pressure of work the statistics of the epidemic have not been entirely satisfactory. Until the last two or three days the "quarters cases," referred to in paragraph 7 above, were not reported to the Surgeon General, so the actual number of influenza cases was in excess of the figures reported to the Surgeon General. On September 16 the reports of the base hospital show no cases of influenza, 51 cases of pneumonia, and no deaths. On September 27 there were 536 cases of pneumonia in the base hopsital and the following numbers of influenza cases in the entire command:

In base hospital proper	383
In base hospital annex	977
In 34 division field hospitals (isolation hospital)	663
In quarters	3,728
Total	5,751

During this period there had been 253 deaths almost exclusively from pneumonia.

The daily admissions for influenza and pneumonia since September 16 are as follows: The 970 cases on September 18 represent an accumulation of three days. The first known case was on the 16th.

	Pneumonia.	Influenza.
Sept. 16	5	
17	2	
18	0	970
19	0	325
20	22	274
21	16	149
22	33	179
23	40	288
24	41	803
25	122	1,007
26	90	1,049
27	113	1,047
28	89	899

14. To supplement the base hospital, a group of 18 company barracks, fortunately empty, were set aside and fitted up as an "annex" base hospital, being administered by the base hospital. This group of buildings was three-fourths mile from the base hospital proper. The annex had been in operation three days at date of my arrival and, considering the suddenness of the organization, it was in excellent condition. Quartermaster cots were used and the rooms supplied on the basis of a bed for each 100 square feet of floor space. In some rooms the beds were too close together around the walls and the central space was empty. This will be corrected at once. The capacity of the annex was 1,040 beds. On day of my visit another adjacent group of barracks, with a capacity of 1,000 beds (on basis of 100 square feet per bed), was being vacated and the occupants placed under canvas.

The annex was equipped with straw mattresses and the soldiers' own blankets. Medical Department sheets, some pillows, pillowcases, and pajamas were provided. There was one female nurse on duty, and more were to come on arrival of nurses now en route. Messes were run in some of the buildings and were shortly to be started in more. "Ambulant cases"—that is, influenza patients whose temperatures had been normal 24 to 48 hours—went out of their particular building to the nearest mess for meals. No men with temperatures were allowed to go out to the lavatories. No cubicles had been installed. All attendants were masked. Part of the medical personnel was drawn from the camp physical examining board. A portion of the 186 enlisted men on duty were soldiers from the line who had some previous experience in hospital work. There were 977 patients in this annex, of which 18 were pneumonia. The order and system were most commendable. Adjacent officers' quarters had been set aside for a part of the 100 additional female nurses now under orders for the camp.

15. Near the annex a group of company barracks had been set aside for hospital purposes and was run by the four field hospitals of the division. This hospital had accommodations for 700 patients. The conditions here were not quite as good as in the annex. No sheets, pillowcases, or pajamas were provided. Coughing cases were neither masked nor screened. There was no overcrowding. Female nurses are to be sent here as soon as available.

16. The base hospital was in excellent condition and appeared to be meeting the situation in a most creditable manner. At time of visit there were 2,800 cases at the base hospital proper, but 300 of these were venereal cases which had been placed in tents, and 400 others were to be transferred to the new part of the annex that afternoon. There was only slight crowding at date of visit and that should be entirely obviated when the 400 are moved out. The corridors were not used for sick at all. The porches were occupied by beds and are provided with rolling canvas curtains to keep out rain. All pneumonia cases in wards were cubicled, but not those on porches, though the beds were too close together. Patients were arranged heads and feet alternating. Masking of attendants throughout the hospital was most thoroughly enforced. Ventilation of entire hospital was ample. Straw mattresses and quartermaster beds were used to a considerable extent. All influenza patients are fed in their own wards. They are not cubicled because of lack of sheets.

17. There was one ward full of sick female nurses, of whom 30 were said to have pneumonia. There were 51 on sick report. One nurse and one dietitian have died. One medical officer and one dental officer also have died.

18. There were over 100 bodies in the morgue and adjacent building used as an extemporized morgue. Relays of men were embalming, washing, and dressing the dead. The supply of coffins was adequate. The order and cleanliness of the morgue buildings was not entirely satisfactory. Only three autopsies have been done, as commanding general disapproves. The commanding officer did not know that the authority for doing autopsies had been placed in his hands. The three autopsies showed broncho-pneumonia.

19. There is no serious shortage of supplies. At the outset the camp surgeon directed the camp supply office to purchase anything necessary.

20. Thirty medical officers are en route or arriving at the camp, and it is thought this number will be sufficient, except that two additional laboratory men are needed at once, there being only two on duty, one of whom is a chemist. Ninety-four nurses are ordered to the hospital, of whom 30 have arrived. This number is not sufficient. One hundred additional enlisted men, Medical Department, arrived last night and the number appears sufficient at present, in view of the men detailed from the camp.

21. The type of pneumonia was reported to be about half pneumococcus and one-half streptococcus (not hemolytic), in both instances usually associated with influenza bacillus. Six cases of empyema have developed thus far. The colored men appear to be suffering less from the influenza and pneumonia epidemic than are the whites. Influenza cases are being kept seven to eight days in hospital. The rule is to keep them in until temperature has been normal four days.

22. Numerous circulars relative to prevention of influenza and its complications have been issued by the camp authorities. These are very complete and satisfactory. The whole situation has been well handled. The only serious defect has been the retention of mild cases in quarters, but this will shortly be changed and perhaps was necessary at the outset, owing to the suddenness of the onset.

23. Report and recommendations made to commanding general:

SEPTEMBER 28, 1918.

From: ...., M. C.
To: The commanding general, Camp ....
Subject: Sanitary inspection.

1. With reference to the epidemic of influenza and pneumonia at this camp, it is my opinion that the situation is being handled in a generally satisfactory manner in so far as conditions will permit. The following recommendations are made with a view to improving certain details of the work, and it is understood that, in some respects, the procedure recommended is already contemplated by the camp authorities or under way, but not yet completed, on account of lack of time or lack of material. Such recommendations as follow are probably not arranged in the most logical manner because of limited time in which to prepare this letter.

2. It is recommended:

(*a*) That no soldiers who have been afflicted with influenza be returned to duty until at least 10 days after the temperature has become normal.

(*b*) That, in caring for influenza patients, all the provisions in regard to the care of measles which were prescribed in memorandum S. G. O., January 1, 1918, to be carried out. At least 100 square feet of floor space should be provided for all uncomplicated influenza cases with a view to preventing the onset of pneumonia. This is considered even more important than providing the same space for cases which have already acquired pneumonia. All cases of influenza should be screened from each other as rapidly as possible, using cheesecloth if sheets are not available.

(*c*) That, as far as possible, no cases of mild influenza be treated in barracks which are in part occupied by healthy soldiers. To accomplish this purpose it is recommended that additional barracks, if possible, be set apart exclusively for the care of such cases and be administered as an annex to the hospital in the same way as the present annex is administered.

(*d*) That, both in barracks and in tents, the cubicle system be adopted for all healthy men by the use of the shelter tent, supported at one corner of the bed by a stick, or hung from the ceiling by a wire. This was being done in some barracks visited.

(*e*) That mess tables be so arranged that the men shall sit either on one side of the table alone or else the occupants of the two sides of the table be separated by a screen of cheesecloth suspended above the middle of the table.

(*f*) That the present quarantine of the camp against the surrounding country and of the surrounding country against the camp be continued except as regards the entry and exit of the friends and relatives of the seriously ill.

(*g*) That, as soon as the epidemic disappears, the population of the camp be reduced to the number for which quarters have been provided on the basis of 50 square feet of floor space per man or else that the quarters be sufficiently amplified to provide accommodations for the number here.

(*h*) That female nurses be provided for the barracks used as a hospital annex and in the barracks used as a hospital by the field hospital companies as soon as they are available.

(*i*) That, if possible, improvised corridors covered with canvas be provided to connect the lavatories with the barracks which are being used for hospital purposes.

(*j*) That steps be taken to prevent men from crowding together in post exchanges and also about the stoves when they are in barracks.

(*k*) That the laying of the dust in the camp be expedited as much as possible.

(*l*) That the greatest care be taken in the disinfecting of thermometers used for taking temperatures in the barracks.

(*m*) That all the patients in the infirmary annex to the tent area in the depot brigade be masked or cubicled.

(*n*) That the providing of pieces of newspapers under the spit cups in the barracks used as wards be enforced.

(*o*) That messes be started as soon as possible in all the barracks used as wards in order to save convalescents from the necessity of going outdoors.

(*p*) That sheets and pillow slips be provided for the sick in the barracks run as a hospital by the sanitary train.

(*q*) That greater care be taken to maintain order and cleanliness in the buildings which are now being used for the temporary shelter of the dead at the base hospital.

(*r*) That cases of pneumonia and influenza on porches at the hospital be cubicled as well as those in the wards.

24. Recommendations to Surgeon General:

(*a*) That 30 additional nurses be sent at once.

(*b*) That two additional officers for the laboratory service be sent at once.

Both these matters have been taken up personally with the proper divisions and are being adjusted.

(*Cir. Memo. from the Surgeon General, September 30, 1918.*)

Precautions Against Transfer of Influenza Contacts.

The following is furnished for your information and guidance:

[Night letter.]

AGO 220.33 (Miscl. Div.) CHA/IM.

September 20, 1918.

Commanding General, Northeastern Department,
Boston, Mass.:

Reference all movements of men to and from your camp at this time all possible precautions will be taken against transfer of any influenza contacts, but movements of officers and men not contacts will be effected promptly as ordered.

Details of all movements from your camp to other camps will be arranged with commanding officers thereat. Make no movements until commanding officers of camps to which men are to be sent advise you their camps not quarantined and they are ready to receive men. All movements which may be suspended due to quarantine will be effected as soon as conditions will permit.

You will inform all under your control.

Harris.

[1st ind.]

On copy of—
220.33 (Miscl. Div.). CHA/HDH

War Dept., A. G. O., September 30, 1918.

To the Surgeon General, who will inform all under his control.

(*Cir. Memo., Surgeon General's Office, October 2, 1918.*)

Assignment of Epidemiologist to Camp.

1. The prevention of communicable diseases and the proper management of epidemic outbreaks is of paramount importance, and in the larger camps require the full time and services of the most competent medical officer qualified in epidemiology for this work.

2. A report is desired if you have within the camp a medical officer thoroughly qualified to undertake the duties of epidemiologist under your direction. If no officer is available, report will be made to this effect, and recommendation will be made by this office for the assignment of a qualified epidemiologist for duty at your camp.

(*Cir. Letter from the Surgeon General, October 13, 1918.*)

Sterilization of Shaving Brushes in Possession of Incoming Recruits.

1. The measures taken to prevent anthrax infections through shaving brushes have been most successful, but there is some evidence that occasional infections may be traced to cheap brushes purchased by recruits before leaving home. It is advised, therefore, that shaving brushes in possession of incoming recruits, if purchased within one month previous to entering camp, be sterilized.

(*Cir. Letter, Surgeon General's Office, October 21, 1918.*)

Report on the Influenza and Pneumonia Epidemic.

1. It is desired that a brief report of the recent epidemic of influenza and pneumonia at all camps and stations be forwarded to this office, attention Division of Sanitation, as soon as practicable. The following should be included in the report:

(*a*) Composition and strength of the command.
(*b*) The history and general management of the epidemic.
(*c*) Amount of floor space provided in camp for each man, and the floor space provided in camp hospitals.
(*d*) Were cubicles used in camp and in hospitals?
(*e*) Sufficiency and suitability of clothing.
(*f*) Were mess kits and dishes boiled by organizations and hospitals?
(*g*) The relative number of white and colored men in camp, with morbidity and mortality rates for each.
(*h*) Any other important observations, data, or charts concerning the epidemic.
(*i*) Tables showing the daily admissions for influenza and pneumonia and the deaths resulting in the following form:

Date.	Daily admissions for influenza.	Daily admissions for pneumonia.	Deaths.
....	....	....	....
....	....	....	....
Total..............	....	....	....

(*j*) Where reports have already been submitted by the camp surgeon or epidemiologist, information to that effect by letter will be sufficient.

(*Cir. Letter, Surgeon General's Office, October 30, 1918.*)

Consolidation of Section on Communicable Diseases and Epidemiology, and Infectious Diseases and Laboratories.

The functions and personnel of the Section on Communicable Diseases and Epidemiology (Division of Sanitation) are, of this date, consolidated with the Division of Infectious Diseases and Laboratories, under the direction of the officer in charge of the latter division. All matters of principle relating to infectious diseases (except tuberculosis) will be referred to this latter division with appropriate recommendations before they are sent out from this office.

(*Office Order No. 91, Surgeon General's Office, November 2, 1918.*)

Report by the British War Office Committee on Dysentery.

1. The inclosed copy of a report by the British war office committee on dysentery, entitled "Recommendations as to the treatment of patients infected with entamoeba histolytica," is forwarded for your information and guidance.

WAR OFFICE COMMITTEE ON DYSENTERY.

RECOMMENDATIONS AS TO THE TREATMENT OF PATIENTS INFECTED WITH ENTAMŒBA HISTOLYTICA.

These recommendations were drawn up by Mr. Clifford Dobell, F. R. S., and Dr. H. H. Dale, F. R. S., at the request of the dysentery committee and have been approved by them. They are circulated for information and guidance.

1. It may be laid down, in the first place, that the only admissible treatment, for patients in whom an amebic infection calls for treatment at all, is one which aims at the complete eradication of the infection.

2. *Treatment with emetine essential.*—The evidence available indicates treatment with emetine as the only measure likely to effect such a radical cure. Mere palliative treatment, which may assist the disappearance of immediate symptoms, but leaves the patient still infected and always in danger of relapse, must at best be regarded as accessory to the course of emetine.

Emetine itself, if given in insufficient dosage or by unsuitable methods, may act as such a temporary and palliative remedy. For the radical cure, which must be attempted, it is essential that emetine be given in adequate doses over a sufficient period and by appropriate methods.

3. *Emetine not to be given indiscriminately.*—While emetine is the only proved specific for amebic infection, there is no evidence whatever of its having any value in the treatment of dysentery due to other causes. It must be remembered also that emetine is a drug which is highly toxic to man. It has been abundantly proved, both by animal experiment and by clinical experience, that its administration in larger quantities and over longer periods than here recommended may give rise to severe intestinal irritation (which may, in extreme cases, be confused with dysentery), to cardiac weakness, to great prostration, and even collapse. Continuous treatment with emetine, regardless of the fact that it is a toxic substance, has probably in some cases caused the death of the patient. The indiscriminate employment of this drug is therefore, in our opinion, most undesirable; and even within the safe limits of dosage here indicated, there is, we think, no justification for its use in dysenteries which are not amebic in origin.

4. *Dosage and administration.*—For controlling the course of the infection sufficiently to cause abatement or disappearance of acute symptoms, emetine hydrochloride given hypodermically appears to be efficacious, though there is no evidence that it acts more promptly when thus administered than when taken by the mouth. If it should seem desirable, therefore, it is permissible to begin the treatment of a patient suffering from acute amebic dysentery by a short course of hypodermic injections, the amount given being 1 grain per diem. Experience has shown, however, that even when such hypodermic administration is continued for 10 or 12 days, it fails to eradicate the infection in a large proportion of cases; the patients, though freed from most or all of their symptoms, remaining carriers of the parasite and in danger of relapse. If the hypodermic method is used in the inital stage of the treatment, it should, to prevent this result, be supplemented by a thorough course of emetine given by the mouth.

The only difficulty involved in administering emetine by the mouth is due to the readiness with which it causes vomiting. Attempts have been made to overcome this difficulty by coating the pill or tablet containing the emetine with some material insoluble in the stomach and only dissolved in the intestine; or by giving the emetine in the form of a compound which is insoluble in the gastric juice but gradually liberates emetine in the intestine. It may be stated at once that experience during the past few years seems to indicate that no method has succeeded in suppressing altogether the nauseating effect of emetine without at the same time compromising and rendering, at best irregular, its therapeutic effect on amebic infection. The so-called "adsorption compounds" of ipecacuanha or emetine with fuller's earth, such as "Alcresta ipecac.," etc., have found favour with some on account of the absence of vomiting after their administration; but their action is apparently uncertain and their use is not, in our opinion, to be recommended. Two methods have hitherto shown a good record of permanent cures:

(*i*) Wenyon and O'Connor recommend a course of combined hypodermic and oral administration of emetine hydrochloride—1 grain per diem hypodermically and ½ grain per diem by mouth in a keratin-coated tablet, for 12 days. The proportion of cures reported is high, but the series hitherto published is small.

(*ii*) The administration of the insoluble double iodide of emetine and bismuth by the mouth. The proportion of emetine in this compound is not absolutely constant, and it is desirable that a minimum content of 26 per cent of emetine alkaloid should be guaranteed. This is the method which has been given the most thorough trial in the United Kingdom, and the results, when the treatment has been conscientiously carried out, have been such as to lead us to recommend it in preference to other methods.

We suggest, therefore, that for treatment of all patients in the United Kingdom for amebic infection the administration of emetine bismuthous iodide by mouth might be adopted with advantage as a routine, to the exclusion of other methods. The rough treatment with this compound has proved efficacious in a large series of cases previously treated unsuccessfully with emetine in other forms. It should, therefore, be given to all cases calling for treatment, whether they have previously had emetine or not.

Recommendations have recently been made for the administration of emetine by intravenous injection. It may safely be stated that there are at present no practical or theoretical considerations of sufficient weight to justify the greatly increased risk which this method entails. Emetine, when so given, has a far higher toxicity than when given by mouth or hypodermically and there is no evidence that its therapeutic effects are better.

5. *Form of administration and dosage of emetine bismuthous iodide.*—Emetine bismuthous iodide is an almost insoluble powder, from which the emetine is gradually set free by contact with the intestinal juices. It is important, therefore, that such contact should in no way be prevented by the form of administration. The following procedures in dispensing have been shown to render the compound irregular in action or totally ineffective, and should be prohibited:

(1) Compression of the powder into a hard tablet.

(2) The use of insoluble excipients, such as liquid paraffin, vaseline, or resin ointment. Soap has also proved unsuitable.

(3) Coating with keratin or stearin.

The most regularly effective form of administration has been to give the loose powder, without excipient, inclosed in a hard gelatine capsule or a paper cachet. If preferred, the powder can be given in jam. If pills are made, for convenience in dispensing, they should be made with a simple syrup basis. The trouble due to vomiting is frequently eliminated by coating such pills with salol (which must not be mixed with shellac), but the coating seems liable to become less readily soluble in the intestinal juice if the pills are kept for some time. It seems to us preferable to give instructions that the compound should be supplied as the powder; and medical officers should be told that nausea and vomiting are to be expected during the earlier part of the course, and are not to be regarded as diminishing the efficacy of the treatment, but, on the contrary, as an indication that the compound is being properly decomposed and is producing its desired effect. Consistent absence of nausea and diarrhea is usually an indication that the drug is being given in a form which causes it to pass unchanged through the bowel and to lose its therapeutic action.

The dose should be 3 grains of the double iodide per diem, and should be given 12 consecutive days. Neither shortening nor intermission of the course is allowable if the proper effect is to be obtained. It is, therefore, very undesirable to begin the treatment of a group of patients unless sufficient of the drug is on hand to insure that each of them can receive the full course of 36 grains without interruption. Shortening or intermission of treatment or reduction of the dose increases the proportion of relapses and wastes time in the end.

In order to emphasize the necessity of full and continuous treatment with this compound we suggest that, except when the loose powder is supplied in bulk to be dispensed at the hospital, it should be issued in suitable cachets, capsules, or pills, in boxes or bottles containing 12 doses of 3 grains each. Each box or bottle should bear a label with the indication:

Emetine bismuthous iodide. Three grains. One to be given every day for 12 consecutive days.

The label should have spaces for the name and number of the patient, and dates of beginning and completion of treatment.

6. *Method of administration and symptoms during treatment.*—Patients suffering from acute or subacute dysentery should be sent for treatment to a recognized dysentery hospital, and should be confined to bed during the whole course. In the case of carriers, confinement to bed is unnecessary unless the treatment causes vomiting and diarrhea of unusual severity. In all cases, however, it is desirable that the dose should be given to the patient when in bed, and preferably when he has gone to bed for the night.

Administration on an empty stomach is not advisable. It is better for the patient to go to bed shortly after a good meal, and then take the dose with a cup of hot tea. If he can get to sleep before the nauseating effect begins, the trouble is greatly reduced. If vomiting is severe, and especially if it occurs so soon after the drug has been taken as to cause partial rejection of the dose, it may be controlled by giving ♏x—♏xv of tinct. opii shortly before the emetine.

Administration in bed has the additional advantage that the patient is under control and observation. Many cases have come to light in which patients, who have experienced the unpleasant effect of a first dose, have shown great ingenuity in getting rid of subsequent doses without swallowing them. Great vigilance is sometimes necessary to insure that treatment is not thus evaded. It is well that medical officers in charge of this treatment should realize clearly that vomiting is to be expected, that it does not compromise the success of the treatment, and that many patients become relatively tolerant of the drug after the first few doses.

Apart from nausea and vomiting, a looseness of the bowels is the only common symptom during the course. It is seldom so severe as to require any measures to mitigate it. Abdominal discomfort and some general malaise are sometimes reported.

The condition of the heart and pulse should be noted daily, but the treatment should not be abandoned unless depression becomes severe.

Patients with acute or subacute dysentery should have milk diet during the treatment, and after its conclusion the return to normal diet should be cautious and gradual. It must be borne in mind that suppression of the infection is not synonymous with immediate and complete restoration of the intestinal mucosa. For carriers no severe dietary restriction is needed even during the treatment, but foods liable to irritate the intestine should be avoided. Alcohol in any form should be prohibited during the course of treatment and until the patient's discharge from hospital as cured of his infection.

During the period of convalescence it is important that the patient should avoid undue fatigue, chills, cold bathing, and excesses of any kind.

7. *The number of negative examinations which shall constitute a "cure."*—If observations are required for the special purpose of testing or recording the results of treatment, then no case should be recorded as "cured" (i. e., freed of infection with *E. histolytica*) unless at least six negative examinations of the stools have been made, after the completion of treatment, by a competent protozoologist. The six examinations should be made as follows:

One in the first week after treatment.

One (or two) in the second week after treatment.
Four (or three) in the third week after treatment.

The last examination to be made not earlier than the twenty-first day after the completion of treatment. Negative examinations made during treatment are never to be counted.

To insure that these examinations are properly carried out it is advisable that the dates on which specimens are due to be examined should be written down for each case as soon as treatment is ended. Samples of feces should then be collected and sent in for examination strictly according to this programme. (If, for any reason, a sample is unobtainable on the day when it is due, a sample obtained on the day following may be substituted.)

Whenever this is possible, each case should be examined by the same protozoologists throughout. No case should begin treatment before at least one positive examination of the stools has been made by the examiner, who will subsequently be responsible for the negative examinations after treatment. Many mistakes can be avoided by taking this precaution.

The six negative examinations made in this manner only constitute a "cure" in the sense that the case shall be considered "freed from infection." Removal of the parasites is not immediately followed by healing of the ulceration produced by them in the bowel. This should always be borne in mind when considering the clinical after-treatment of every "cured" case.

8. *Treatment of relapses.*—Even the most conscientious application of the above treatment will fail to remove the infection from a small proportion of the cases treated. A further proportion of these can, however, be cured by a second and longer course of the treatment. It is recommended that, when it is considered advisable to give such a second course, this should be a double course—the same daily dose (3 grains) of emetine bismuth iodide being given for 24 consecutive days, so that 72 grains in all are given. After-treatment and examinations should then be carried out as after the first course of treatment. Some observations are on record which appear to indicate that a certain proportion (up to 40 per cent) of cases which have not been cured by two courses of emetine bismuth iodide can be freed from infection by treatment with the infusion of the Mexican drug "chaparro amargosa" (*Castela Nicholsoni, simarubaceæ*). It is suggested that this might be given a trial when further treatment seems desirable of cases which have proved refractory to the emetine treatment. Below are the details of the method as used at a dysentery hospital in the United Kingdom where the treatment with chaparro has been extensively tried. A trial at the same center of a similar infusion of simaruba bark, similarly administered, has given results of the same order, and this might be used if chaparro is not available.

9. *Details of course of treatment with "chaparro amargosa."*—Treatment lasts 10 days. Before breakfast on the first day 1 ounce of mag. sulph. given. Five teaspoonfuls of powdered chaparro are used each day—three for drinks and two for enema. The drinks are given half an hour before breakfast, dinner, and supper. The drink is prepared by boiling for a quarter of an hour one teaspoonful of powdered chaparro in 8 ounces of water. Allow to cool, and strain, so that clear fluid is given to drink. The enemas are given one in the morning about 10 a. m. and one in the evening about 6 p. m. The enema is prepared in the same way as the chaparro for drinking, except that 12 ounces of water are used instead of 8 ounces. Enema given by a rubber catheter attached to rubber tube and funnel. Patient remains in elbow-knee position for at least 15 minutes after enema, if possible, and retains the enema as long as possible.

War Office,
September, 1918.

(*Cir. Letter, Surgeon General's Office, November 14, 1918.*)

Suggestions for Camp Epidemiologists in Recording Data on Epidemiological Card.

1. Line headed "Name" is self-explanatory.

2. Line headed "Surgeon's report" explains itself. The first information that the camp surgeon's office receives concerning a case or suspected case of contagion is from the organization surgeon, who has been directed to immediately report in writing, via messenger, the name of the disease, name, rank, organization, company, barrack of the sick.

3. Lines headed "Base hospital report." These lines are filled in later, when the reports are received. Notification of diagnosis of infectious disease is first made by telephone from the registrar's or adjutant's office of the hospital, and daily confirmation made in writing.

4. Lines headed "Disinfection" are to record measures taken as directed by the camp surgeon for execution by a detail from the organization medical detachment.

5. Lines headed "Overcrowding" are to record measures taken in conformity with regulations of camp surgeon. The first entry made is as to whether the patient was sleeping on the first or second floor.

6. Lines headed "Contacts." Contacts are divided into two classes:

(*a*) Immediate; i. e., those sleeping within a radius of four or five beds when in barrack, or all tent mates, and all men who, upon investigation, are found to have been in close contact with the case.

(*b*) Remote; i. e., others in the same barrack, or entire company, as judgment may direct. The probable immunity to measles and scarlet fever can only be determined by very carefully questioning the contact.

Under "Disposition" the usual record will be "Contact camp," but may be "None," provided definite immunity has been determined.

Under "Termination" note whether the disease develops in contacts or not.

"Hospital admission number." On the red line in the upper right-hand corner of the front side of the card, place the admission number. This permits reference to the completed hospital history and obviates the necessity of searching the alphabetical file in the registrar's office to obtain this number.

"Tabulation number." The numbers 1 to 19 on the sides and 1 to 31 on the top and bottom of the card are provided for the tabulation of statistics in Washington, and should not be used for any purpose by the epidemiologist.

7. Lines headed "Personal history." In order to eliminate the personal equation or factor of the recorder of personal history, data concerning previous infection, recent and present illness, recreation, visitors, and associates should be obtained by the same individual for all cases. This is important in order to secure uniform and reliable data for intelligent use and comparison at the Office of the Surgeon General.

8. Line headed "Laboratory." This information should be obtained from the chief of the base hospital laboratory in his daily report to the camp surgeon.

9. Lines headed "Hospital." This summarizes all hospital features of the case. This should include notation as to the final diagnosis as determined by the chief of the medical service. Complications and their dates should be added, the four lines under the brief diagnosis being provided to record the principal disease and the complications. The diagnosis should be recorded complete, as required by the Manual for the Medical Department.

(*Cir. Memo. from the Surgeon General, November 22, 1918.*)

Reporting of Communicable Diseases of Discharged Soldiers.

1. The attention of medical officers is called to the inclosed reprint from Public Health Reports of February 7, 1919, United States Public Health Service, which lists those diseases required by law to be reported to the health authorities in each of the States, and also to the inclosed list of the addresses of the State boards of health.

2. On the discharge of a soldier having any disease required to be reported to the health authorities in the State to which he is going, a sealed report will be sent to the board of health of that State. This report will give the soldier's name, his full address at the point of destination, and the name of the disease.

3. Special care should be given to the reporting of venereal diseases, as cases discharged in a noninfectious state may need further treatment and supervision. The method of reporting venereal diseases varies in the different States, but in reports of cases of men who are discharged with venereal disease the name and address will be given in all instances. The medical officer may, in his discretion, add information regarding past treatment and supply other data of use to the health authorities in determining what further treatment and observation will be needed. Such additional data will be most valuable in cases of latent syphilis and will, in many instances, give the patient further benefit from the information contained in his syphilitic register.

4. The reporting of venereal cases to State health officials has been requested by the United States Public Health Service. The Surgeon General of that service states that such information will remain confidential, and will be used only by accredited representatives of the Public Health Service, or persons selected by them to work in connection with venereal-disease control as representatives of the State boards of health.

State.	Officer.	Address.
Alabama	Executive health officer	State Board of Health, Montgomery, Ala.
Arizona	do	State Board of Health, Phoenix, Ariz.
Arkansas	do	State Board of Health, Little Rock, Ark.
California	do	State Boord of Health, Sacramento, Calif.
Colorado	do	State Board of Health, Denver ,Colo.
Connecticut	do	State Board of Health, Hartford, Conn.
Delaware	do	State Board of Health, Wilmington, Del.
District of Columbia	do	District Health Department, Washington, D. C.
Florida	do	State Board of Health, Jacksonville, Fla.
Georgia	do	State Board of Health, Atlanta, Ga.
Idaho	do	State Board of Health, Boise, Idaho.
Illinois	do	State Board of Health, Springfield, Ill.
Indiana	do	State Board of Health, Indianapolis, Ind.
Iowa	do	State Board of Health, Des Moines, Iowa.

State.	Officer.	Address.
Kansas	Executive health officer	State Board of Health, Topeka, Kans.
Kentucky	do	State Board of Health, Louisville, Ky.
Louisiana	do	State Board of Health, New Orleans, La.
Maine	do	State Board of Health, Augusta, Me.
Maryland	do	State Board of Health, Baltimore, Md.
Massachusetts	do	State Board of Health, Boston, Mass.
Michigan	do	State Board of Health, Lansing, Mich.
Minnesota	do	State Board of Health, St. Paul, Minn.
Mississippi	do	State Board of Health, Jackson, Miss.
Missouri	do	State Board of Health, Jefferson City, Mo.
Montana	do	State Board of Health, Helena, Mont.
Nebraska	do	State Board of Health, Lincoln, Nebr.
Nevada	do	State Board of Health, Carson City, Nev.
New Hampshire	do	State Board of Health, Manchester, N. H.
New Jersey	do	State Board of Health, Trenton, N. J.
New Mexico	do	State Board of Health, Santa Fe, N. Mex.
New York	do	State Board of Health, Albany, N. Y.
North Carolina	do	State Board of Health, Raleigh, N. C.
North Dakota	do	State Board of Health, Bismarck, N. Dak.
Ohio	do	State Board of Health, Columbus, Ohio.
Oklahoma	do	State Board of Health, Oklahoma City, Okla.
Oregon	do	State Board of Health, Portland, Oreg.
Pennsylvania	do	State Board of Health, Harrisburg, Pa.
Rhode Island	do	State Board of Health, Providence, R. I.
South Carolina	do	State Board of Health, Columbia, S. C.
South Dakota	do	State Board of Health, Waubay, S. Dak.
Tennessee	do	State Board of Health, Nashville, Tenn.
Texas	do	State Board of Health, Austin, Tex.
Utah	do	State Board of Health, Salt Lake City, Utah.
Vermont	do	State Board of Health, Burlington, Vt.
Virginia	do	State Board of Health, Richmond, Va.
Washington	do	State Board of Health, Seattle, Wash.
West Virginia	do	State Board of Health, Charleston, W. Va.
Wisconsin	do	State Board of Health, Madison, Wis.
Wyoming	do	State Board of Health, Cheyenne, Wyo.

(*Cir. Letter No. 107, Surgeon General's Office, February 26, 1919.*)

Discharge of Patients Capable of Transmitting Infection.

1. Reports indicate that a considerable number of carriers of intestinal parasites and carriers of typhoid and paratyphoid bacilli are arriving from France.

2. All overseas patients whose history indicates possible previous infection with intestinal group of organisms (typhoid, paratyphoid, dysentery, cholera) will be examined to determine whether or not they are carriers, and those found to be carriers will be treated by appropriate medical and surgical measures to free them from this condition. Attention is invited to Circular Letter No. 41, paragraph 2*b*, S. G. O. If any carriers have been discharged or may in the future be discharged, they should be reported as required by Circular Letter No. 107, S. G. O.

3. The retention of soldiers having venereal diseases in the Army and their intensive treatment until they have been rendered clearly noninfectious, as required by Circular Letter No. 41, paragraph 2*b*, S. G. O.; Circular Letter No. 86, paragraph 1*c*, W. D., November 25, 1918; Circular Letter No. 93, paragraph 3, W. D., November 27, 1918; and also the reporting of cases of venereal disease in discharged soldiers in accordance with Circular Letter No. 107, S. G. O., are measures essential to the welfare of the soldier and necessary for the protection of the civil population.

4. Wassermann examination should be made on all recruits at recruit depots. Positive Wassermann, however, does not disqualify for service in the absence of active lesions of syphilis. Examinations for carriers of intestinal organisms should be made when practicable, or when suspicious symptoms or history indicate necessity for it. Carriers of the intestinal group of organisms should be handled as directed in paragraph No. 2 above.

(*Cir. Letter No. 141, Surgeon General's Office, March 18, 1919.*)

Telegraphic Reports of New Cases of Influenza.

1. It is no longer required that daily telegraphic report to this office be made for new cases of influenza. New cases will be included in the weekly telegraphic report as heretofore.

2. Daily telegraphic reports will be continued for new cases of pneumonia, meningitis, and deaths occurring during the preceding 24 hours. If no new cases or deaths occur, no report is required.

(*Cir. Letter No. 192, Surgeon General's Office, May 1, 1919.*)

Vaccination and Immunization of Reenlisted Soldiers Against Smallpox, Typhoid, and Paratyphoid Fevers.

1. With reference to the provisions of paragraph 25, Special Regulations 28, and in view of the difficulty in establishing to the satisfaction of the responsible medical officer the fact of the completion of previous vaccination or immunization within a definite period, it is the desire of this office that, until further instructions are received, all men, immediately upon reenlistment, be vaccinated or revaccinated against smallpox and immunized or reimmunized against typhoid and paratyphoid fevers.

(*Cir. Letter No. 199, Surgeon General's Office, May 5, 1919.*)

Reporting of Communicable Diseases of Rejected Applicants for Enlistment.

1. The provisions of Circular Letter No. 107, Office of the Surgeon General, February 26, 1919, concerning the reporting of communicable diseases of discharged soldiers will apply also to the reporting of communicable diseases of rejected applicants for enlistment.

2. Reports of cases of venereal disease are required to be sent to the boards of health of all States requiring the reporting of these diseases. The following are the only States without such requirement: Missouri, Tennessee, Pennsylvania, and Nevada.

3. Reports under this letter and Circular Letter No. 107 should give the age and race in addition to the name and address.

(*Cir. Letter No. 220, Surgeon General's Office, May 23, 1919.*)

Vaccination and Immunization of Reenlisted Soldiers Against Smallpox, Typhoid, and Paratyphoid Fevers.

1. Circular Letter No. 199, dated May 5, 1919, is rescinded, and the following substituted therefor:

> With reference to the provisions of paragraph 25, Special Regulations 28, and in view of the difficulty in establishing to the satisfaction of the responsible medical officer the fact of the completion of previous vaccination or immunization within a definite period, it is the desire of this office that, until further instructions are received, all men upon reenlistment be vaccinated or revaccinated against smallpox and immunized or reimmunized against typhoid and paratyphoid fevers, with the following exceptions with respect to the typhoid immunization alone:
>
> (*a*) Persons 45 years of age or over.
>
> (*b*) Men who have already served two enlistments in the Army or Navy and who have had at least two courses of the triple typhoid prophylactic.

(*Cir. Letter No. 251, Surgeon General's Office, July 3, 1919.*)

VENEREAL DISEASES AND THEIR CONTROL.

Venereal Disease Control.

1. The attention of all division surgeons has been invited in the past to the desirability of assigning one officer attached to the divisional headquarters to see that follow-up treatment is carried out and to supervise prophylaxis and recording of venereal diseases.

2. You are requested, therefore, to ascertain from the division surgeon and the division sanitary inspector what the arrangements are in the camp in your territory, who the officer is, and whether there is any particular matter in which we can be of service to this officer.

3. You will also ascertain the number of copies of the Manual of Treatment of Venereal Diseases as issued by the Surgeon General that have been received by the division surgeon for distribution to the regimental medical officers. You will offer the division surgeon any additional copies that he may desire, and upon ascertaining the number write this office and they will be forwarded promptly.

4. You will inquire if additional copies of Venereal Diseases, Facts Every Soldier Should Know, are wanted, and in what quantity, together with name of officer to whom shipment should be made.

5. Your attention is called to the fact that it is customary in the service to promptly reply by indorsement to all communications. In order to make your work efficient, this office will endeavor to answer your mail the same day it is received and you will reciprocate.

(*Memo. from the Surgeon General, March 5, 1918.*)

Management of Chronic Venereal Diseases.

From information received at this office, it appears that there are a great many cases of chronic venereal diseases at some cantonments. The present methods of handling these chronic ambulatory cases are not uniformly satisfactory and the following plan is suggested with the object of improving the service. Suitable recommendations to carry out this policy should be made by you to the division commander or other commanding officer.

1. There should be an officer expert in the treatment of venereal diseases in the division available for assignment to this work. One will be furnished if not now present.

2. One or more infirmaries in each division should be designated for the treatment of ambulatory venereal cases. Their location should be such as to necessitate the minimum of travel for the cases to and from their organizations.

3. The division surgeon should require of the officer in charge of this work that he make all necessary arrangements for the proper treatment and aftercare of all cases, keeping records, and also for the instruction of regimental medical officers, for whom the infirmaries should be made valuable as schools for practical clinical training in venereal diseases. One medical officer from each regiment should be detailed by roster to assist in this work.

4. In addition to the treatment of chronic ambulatory cases, these venereal infirmaries should follow up the treatment of cases of gonorrhea discharged from the hospital, and may also make microscopical examinations for the early diagnosis of syphilis, if desired by the division surgeon.

5. Attention is invited to the instructions on syphilitic registers which will be strictly complied with. Recommendations as to further treatment should be submitted by the hospital in cases discharged therefrom to the care of these infirmaries. The further treatment of syphilitics may be carried out at the base hospital or at the venereal infirmaries, as seems more desirable. In the gonorrheal cases, a brief statement setting forth the history, treatment administered, and further treatment recommended should be similarly forwarded.

6. Cases of urethral discharge of long duration without evidence of stricture or other complication, found upon repeated thorough examination to be free from gonococci, should be returned to duty with a certificate to their organization surgeon, stating that their condition is not infectious; a copy of this certificate will accompany the man on his transfer to a new station.

7. The division surgeon should take such additional measures to secure the proper care and treatment of all venereal cases as may be necessary.

8. Nothing in this plan shall be construed to interfere with the existing practice appertaining to the management of the acute (fresh) cases of syphilis and gonorrhea or the chronic cases with acute exacerbations; these will, as heretofore, be treated at the base hospital.

(*Cir. Letter from the Surgeon General, April 12, 1918.*)

Detection of Venereal Diseases.

1. The present methods of complying with section (*b*), paragraph 198, Manual for the Medical Department, United States Army, 1916, vary with the individual medical officers. Attention is called to the portion of the paragraph directing that "the inspection will be made at times not known beforehand to the men and preferably immediately after a formation."

A. The examining medical officer should have a table at his side, arranged upon which should be writing materials for noting names and physical conditions, slides for smears, and glasses for urine. In addition, there should be conveniently placed for the surgeon's use a basin containing one-half per cent solution of liquor cresolis compositus or equally efficient disinfectant, and towels. The soldier should be ready for examination with his clothing loosened and everything prepared for quick exposure of lower abdomen and of thighs. When called for in his turn by the medical officer, he then steps into place immediately before the examiner, in adequate light, parts properly exposed.

B. The medical officer should examine as follows:

(1) Inspection of skin of the abdomen, thighs, and genitals.
(2) Palpation of each groin.
(3) Palpation of scrotum and contents.
(4) Retraction of foreskin and inspection of corona, frenum, glands, and meatus.
(5) Milking of urethra from peno-scrotal junction forward and separating lips of meatus.
(6) Collection upon slide of any material appearing at meatus.

(7) Inspection of clothing for urine voided to free meatus of discharge, and for soiling by discharge.

(8) Washing of hands.

Care should be observed in performing steps (4) and (5). In retracting the foreskin and in stripping forward the urethra, it is possible to force back the discharge, which thus may escape detection and aggravate any existent disease, and bring on a posterior involvement.

2. These steps consume but little time. Less thorough inspection methods do not detect scrotal troubles, erosions, syphilitic rashes, and glandular involvement. No reliance should be placed on memory; adequate records should be made at the time of examination, and absentees should be checked with accuracy.

(*Cir. Letter, Surgeon General's office, April 29, 1918.*)

Variation in Toxicity of Arsphenamine.

There seems reason to believe that there is a considerable variation in the toxicity of different brands and different batches of arsphenamine (formerly known as salvarsan) which are now being produced. In view of this fact, particular care should be used in the administration of this drug at the present time. Attention is again called to the directions for administering salvarsan, as given in the Manual of Treatment of Venereal Diseases, of the S. G. O., on pages 18 to 27.

While we have no reason to believe that intensive use of arsphenamine has been responsible for any reactions, it is recommended that the drug should not be administered oftener than at intervals of five days or in doses larger than 0.04 to 0.06 decigrams. The practice of giving several doses on successive days or at relatively very short intervals is of questionable safety and should be discontinued.

Especial care should be used to avoid dangers from oxidation. Vessels used in the administration should not only be surgically clean but chemically clean as well. The brand known as arsenobenzol, made by the Medical Research Laboratories of Philadelphia, is poorly soluble in water at room temperature. Long experience has shown that this can safely be dissolved in hot water, and dissolving in hot water is a proper technique for this brand. The brand known as Salvarsan, made by the Farbwerke-Hoechst Co., apparently is not stable in hot water and should be dissolved only in water at room temperature. Of course, arsphenamine solutions should not be boiled.

The term arsphenamine should be used to denominate this drug, the special brand being indicated by the proprietary name.

(*Memo., Surgeon General's office, June 8, 1918.*)

Syphilitics for Overseas Duty.

1. To establish a uniform policy with regard to the transfer of cases of latent syphilis, in relation to letter from The Adjutant General of April 4, 1918, to all commanding officers, on venereal diseases, included as communicable diseases, the following standards are promulgated.

2. The letter referred to above states that no syphilitic with open lesion will be transferred from one station, camp, or cantonment to another or to a post of embarkation. This seems perfectly plain, and all reference to the Wassermann reaction was intentionally omitted. A man, however, may be regarded as suitable for transfer when his lesions are healed and his Wassermann is negative, or in the presence of a positive Wassermann when he has had no symptoms for three months.

(*Cir. Letter, Surgeon General's Office, September 6, 1918.*)

Venereal Diseases in the Army.

1. You are directed to circulate copies of this letter among the members of your staff in order that they may be informed as to the venereal disease situation in the Army to-day. The full cooperation of the Medical Department is necessary in order effectually to carry out the Surgeon General's program for combating the venereal disease menace.

2. The Surgeon General's program for combating venereal diseases embraces:

(A) Social measures to diminish sexual temptations.

(B) Education of soldiers and civilians in regard to venereal diseases.

(C) Prophylactic measures against venereal diseases.

(D) Medical care.

3. Statistics on venereal diseases:

(*a*) During the 53 weeks ending September 27, 1918, there have been 178,204 venereal disease cases reported under treatment in the United States Army in this country.

(*b*) Reports indicate that approximately 85 per cent of this number entered the Army already infected, and that approximately 15 per cent of all casess reported were contracted after enlistment.

(*c*) During 1917 over three-quarters of a million days were lost to the Army because of venereal diseases. During the last 53 weeks there has been a loss of over 2,067,000 days.

(*d*) Coincident with the introduction of preventive medicine measures, systematic inspection, and prophylaxis the annual venereal disease rate dropped from 155 per 1,000 in 1910 to 83.60 per 1,000 in 1915. These were practically all new infections, as men infected with venereal diseases were refused at that time admission to the Regular Army.

(*e*) Under the Surgeon General's program as outlined in paragraph 1, the annual venereal disease rate per 1,000 in the United States (new infections) has dropped from 83.60 per 1,000 in 1915 to approximately 20 per 1,000 in 1918. In the American Expeditionary Forces the annual venereal disease rate has varied from 20 to 40 per 1,000. Many of these cases are traceable to the French licensed houses of prostitution, which have now, as far as possible, been placed out of bounds to the United States troops.

(*f*) Prophylaxis applied at the early treatment stations within one hour of exposure protects in almost 100 per cent of cases. Of 23,702 men taking prophylaxis over a period of 22 weeks, only 1 per cent developed a venereal disease, although many of them did not apply for many hours after exposure.

4. General Orders 17 (1912) says:

(*a*) All men who do not take prophylaxis after exposing themselves to venereal infections shall be court-martialed for neglect of duty.

(*b*) A medical officer accompanied by the company or detachment commander shall make a thorough physical inspection of all enlisted men twice a month at a time not known to the men beforehand. The dates of the inspections shall be noted on the monthly sanitary report.

5. To reduce materially the enormous waste of time, money, and man power now existing in the Army because of preventable venereal diseases, every member of the Medical Department must cooperate to the fullest extent in carrying out the entire program for combating venereal diseases. While the civil population, through law enforcement and quarantine and treatment of prostitutes, is decreasing the supply of disease carriers, the Army must use every measure to curb the demand for sex indulgence.

Cir. Letter, Surgeon General's Office, October 19, 1918.)

Prostatic Massage.

1. From reports reaching this office it is noted that large numbers of periprostatic abscesses are occurring in many of the camps.

2. It is requested that you take this matter up with the officer in charge of the venereal station in the camp and ascertain, if possible, the cause.

3. It is believed in this office that the most common cause is faulty prostatic massage. Either the massage is too frequently given or is given in too strenuous a manner. Massage should be carried out as directed on page 98, Manual Venereal Disease, S. G. O., second edition.

(*Cir. Letter No. 58, Surgeon General's Office, January 29, 1919.*)

Activities of the Venereal Service Since Its Establishment.

1. Inclosed you will find a classified list of venereal diseases. Fill in all data.

2. A questionnaire is also inclosed to which the answers will be as full as possible.

3. Add other data or statistics that have proven personally interesting.

4. Attention is called to the fact that the data submitted in answer to this circular letter will be used in the history of your work during the war.

5. You are directed to send this report to the Surgeon General, attention Major Walker.

QUESTIONNAIRE.

Clinical Facts concerning Venereal Diseases—Camp.

GONORRHEA.

1. Is diagnosis invariably made by microscope?
2. What is the proportion of nongonorrheal urethritis?
3. What is the average duration of gonorrhea (give number of cases from which estimation is made in each instance) as to—
    - (*a*) Discharge.
    - (*b*) Gonococci.
    - (*c*) Stay in base hospital.
    - (*d*) Days off duty.
4. Treatment of acute gonorrhea.
5. Treatment of chronic gonorrhea
6. Frequency of—
    - Epididymitis.
    - Acute posterior urethritis.
    - Rheumatism.
7. Was epididymotomy employed? If so, to what extent and with what result?
8. Results of vaccines, if any?
9. Is urethroscope used—
    - (*a*) For treatment.
    - (*b*) For diagnosis.

SYPHILIS.

1. Comments on different forms of arsphenamine and other items in treatment.
2. Comments on diagnosis by spinal puncture.
3. Comments on intraspinal treatment.

CHANCROID.

1. Is diagnosis made by microscope?
2. Comment on most satisfactory treatment.
3. Comment on treatment of suppurating bubo.

Venereal diseases at ....

Date (month).	From—		To—				Number of prophylaxis.	Total venereal disease after prophylaxis.	Mean strength of command.	Race.[1]
	Contracted prior to enlistment.	Contracted since enlistment.	Total venereal disease.	Gonorrhea.	Syphilis.	Chancroid.				
....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....

[1] W—White. B—Black.

(*Cir. Letter No. 111, Surgeon General's Office, March 1, 1919.*

Syphilis, Treatment of.

The following scheme for the treatment of syphilis is published for your information and guidance:

1. For the cure of syphilis it is of the greatest importance that the initial lesion of syphilis be recognized at the earliest possible moment.

2. To this end—

(*a*) Any excoriation, papule, nodule, crack, "hair-cut," herpetic, or other erosion, no matter how small, as well as any ulcer about the genitals or elsewhere, if there is any reason to suspect them, should immediately and before treatment be examined for the spirocheta pallida either at the venereal infirmary or at the base hospital.

(*b*) No lesion, whether a chancre or only suspected to be one, should be treated with mercurials or other antiseptics nor be cauterized, either with chemicals or with heat, before diagnostic examination for spirocheta has been made.

3. Chancroids should be suspected as harboring syphilis until repeated examinations for the spirocheta pallida, until repeated Wassermanns, and until sufficient time has elapsed for the appearance of secondaries all fail to show that syphilis infection does not exist.

4. No case should be treated for early syphilis until a positive diagnosis has been made either by the demonstration of the spirocheta pallida or by the occurrence of a positive Wassermann reaction.

5. Chancres, chancroids, and secondary syphilis cases should be sent to the base hospital and kept there until all open lesions have healed.

6. Upon the discharge of a syphilitic patient from the base hospital, the syphilitic register should be sent immediately to the surgeon of his organization. Receipt for syphilitic register should be returned to the base hospital.

Classification:

1. Primary stage—Primary lesion present, spirocheta pallida present, Wassermann reaction absent, adenopathy absent.
2. Early stage—First 12 months.
3. Late stage—Second 12 months and later.

Drugs—Forms and methods of administration:

1. Arsphenamine—
    - (*a*) Intravenous only.
    - (*b*) Gravity method and slowly only.
2. Mercury—
    - (*a*) Forms—
        - (1) Soluble—Bichloride.
        - (2) Insoluble.
            - *a.* Salicylates in oil.
            - *b.* Calomel in oil.
            - *c.* Gray oil.
    - (*b*) Injection methods—
        - (1) Soluble, into the subcutaneous fat or into the gluteal muscles.
        - (2) Insoluble, into the gluteal muscles.
3. Iodides—
    - (*a*) Potassium—Sodium.
    - (*b*) Solution by mouth.

Dosage:

1. Arsphenamine—
    - (*a*) Normal dosage to be on the basis of 1 decigram to approximately each 30 pounds of body weight. First dose to be one-half of the normal dose; that is, first dose to be 2 to 3 decigrams; subsequent doses 4 to 6 decigrams.
    - (*b*) Dilution to be not less than 25 c. c. of water for each 0.1 of a decigram arsphenamine.
2. Mercury—
    - (*a*) Soluble—
        - (1) Normal dose of bichloride to be 0.016 grams ($\frac{1}{4}$ grain) every second day.
        - (2) Solution for administration to contain 1 per cent bichloride and 1 per cent sodium chloride; 25 minims equal 0.016 gram ($\frac{1}{4}$ grain).
    - (*b*) Insoluble—
        - (1) Normal dose—
            - *a.* Salicylate, 0.064 gram, or grain 1.
            - *b.* Calomel in oil, 0.064 gram, or grain 1.
            - *c.* Gray oil, 0.064 gram, or grain 1.
        - (2) Dilution—Salicylate, calomel, and metallic mercury to be in a suspension of 10 to 20 per cent in oil; that is, 5 drops of 20 per cent suspension or 10 drops of 10 per cent suspension is the normal dose of 0.064 gram (1 grain).
    - (*c*) The dose of any of the salts may be increased with caution.

3. Iodides—
    - (1) Standard solution contains 1 gram (15 grains) of sodium or potassium iodide to each 1 c. c. of water.
    - (2) Dose to consist of 10 to 100 drops of solution; that is, one-half to 6 grams (7.5 to 90 grains).
    - (3) Administer in large glass of water, t. i. d.
    - (4) Only in nervous lesions are large doses of iodides required. One to three grams (15 to 45 grains) t. i. d. are sufficient for most other lesions of syphilis.

Patient:

1. Examine for lesions of heart, blood vessels, kidneys, and other viscera. If any present, administer arsphenamine with extreme caution and mercury carefully.

2. If the teeth are found so defective as to require attention, send case to dentist with the diagnosis.

3. Administration of—
    - (1) Arsphenamine—
        - (*a*) Examine urine for albumin before each administration.
        - (*b*) Give on an empty stomach.
        - (*c*) If given in morning, no breakfast, no dinner.
        - (*d*) If given in afternoon, no dinner, no supper.
        - (*e*) Rest, preferably in bed, until morning after administration.
    - (2) Mercury—
        - (*a*) Examine urine for albumin and casts weekly.
        - (*b*) Watch for sore mouth.
        - (*c*) Watch for salivation.

4. Duty.—All treatment can be given while the patient is doing duty, the only exception being for the few weeks in the base hospital while open lesions are being healed. Only unusual contraindications need change this rule.

Courses:

1. Arsphenamine and mercury to be given together when indicated.
2. Arsphenamine—
    - (*a*) Each course to consist of six doses.
    - (*b*) Doses to be administered at intervals of five to seven days.
3. Mercury—
    - (*a*) Each course to consist of—
        - First. Soluble forms, 24 to 30 injections.
        - Second. Insoluble forms, 9 to 10 injections.
    - (*b*) Doses may be cautiously increased.
    - (*c*) Doses to be administered over a period of 8 to 10 weeks.
4. Iodides—
    - (*a*) Give in latent syphilis.
    - (*b*) Give when tertiary lesions are manifest.

Wassermann tests, periods of rest, and courses of treatment:

PRIMARY AND EARLY STAGES—FIRST 12 MONTHS.

1. After the first course of arsphenamine and mercury, give the patient one month's rest.

2. At the end of one month, take Wassermann; if Wassermann is positive, repeat the entire course; if Wassermann is negative, repeat only the course of mercury.

3. At the end of second course, rest two months; then give third course in accordance with the Wassermann conditions as outlined in first course.

4. Three courses with intervals of rest carry the patient through the first 10 months of treatment.

LATE STAGE—SECOND 12 MONTHS AND LATER.

1. During the second year, if Wassermann remains positive, repeat complete courses of treatment with intervals of rest of two months.

2. During the second year, if Wassermann is negative, give two courses of mercury with intervals of four months.

SCHEMA.

FIRST YEAR.

	Months.
First course of treatment	2–2½
Rest	1
Second course of treatment	2–2½
Rest	2
Third course of treatment	2–2½

SECOND YEAR (IF WASSERMANN IS NEGATIVE).

Rest after third course	4
Course of mercury	2
Rest	4
Course of mercury	2

SECOND YEAR (IF WASSERMANN IS POSITIVE).

If Wassermann remains positive, complete courses of treatment should be given with intervals of rest of two months each.

Treatment of late syphilitic lesions.—These are to be treated by one or more courses of mercury and arsphenamine given in the same way as indicated for early syphilis. The use of mercury and arsphenamine in late lesions should be combined with that of the iodides.

(*Cir. Memo. from the Surgeon General, August 29, 1919.*)

Control of Venereal Disease.

1. With a view to obtaining more complete and accurate information as to the prevalence, incidence, and the contracting of venereal diseases in the Army, it is directed that the senior medical officer of each post, garrison, arsenal, general hospital, field force, or detachment serving as a separate command render to this office the following reports:

A. A weekly report by mail, to include Friday evening, showing the number of cases of venereal diseases under treatment, the new cases discovered during the week, and other information called for on the attached sample form for a Weekly Report of Venereal Diseases. All new cases are to be reported as new, regardless of the place of origin, but under this heading there should not be included any cases which have been previously reported from any station.

B. A weekly report by mail setting forth, in regard to each new case of venereal disease found during the week, the information called for on the accompanying Report of New Case of Venereal Disease.

REPORT OF NEW CASE OF VENEREAL DISEASE.

The soldier will be informed that this information is desired for use in the control of venereal disease, that it will be held confidentially and not used to his detriment, that he is under no compulsion to furnish it but that information will be appreciated. He will be asked to tell the truth or to refuse to answer, but to avoid making misleading statements. A report of this sort will be sent in on each new case of venereal disease detected, but if the soldier refuses to furnish any of the information asked for that fact will be stated.

M. W. IRELAND,
Surgeon General U. S. Army.

.... (Initials.) .... (Rank.) .... (Months of service.)

Diagnosis..........................

Town where disease was contracted..........................

Was it contracted in a house of prostitution? ....

Date of intercourse .... Date of detection of venereal disease..........................

Had soldier been drinking when he had intercourse? .... Much? ....

Was he solicited by the woman? ....

Did disease follow use of prophylaxis? ....

How long after first exposure was prophylaxis used? ....

Did soldier stay all night? ....

What did he pay? ....

Had soldier been instructed as to dangers and avoidance of venereal disease? ....

How many times in past year had soldier been exposed to venereal disease? ....

How many times without prophylaxis? ....

What efforts have been made by army authorities to remove the source of this infection? ....

(Signed) ....

Medical Corps, U. S. Army.
Surgeon ....

[Sample.]

WEEKLY REPORT OF VENEREAL DISEASE IN ORGANIZATIONS AT FORT D. A. RUSSELL, WYO.

	Cases under treatment.	Days lost from duty.	New cases detected.	New cases of gonorrhea.	New cases of chancroid.	New cases of syphilis.	Strength of command.	New case rate per 1,000 per annum.	Prophylactic treatments administered.	Prophylactic rate per 1,000.
Thirteenth Infantry	5	35	5	2	2	1	2,700	96	500	185
Fourth Infantry	7	40	5	3	1	1	2,000	130	200	100
Tenth Cavalry	3	3	1	....	1	....	1,000	52	300	300
First Signal Battalion	1	6	0	....	....	....	200	0	20	100
Third Field Artillery	1	4	1	1	....	....	600	87	90	150
Medical Department detachment	1	1	1	....	1	....	100	520	8	80
Total (for post)	18	89	13	6	5	2	6,600	102	1,148	174

(*Cir. Letter No. 293, Surgeon General's Office, September 2, 1919.*)

Prophylaxis Stations.

1. The following information concerning venereal prophylaxis stations, maintained by the Army in civil communities for the use of soldiers of your command is requested:

....
(Name of camp, post, or station.)

....
(Date.)

(1) Number of venereal prophylaxis stations maintained beyond limits of post, camp, or station?

(2) Under what control?

(3) Location of stations (city, street, number).

(4) Travel-time distance from post infirmary?

(5) Number of rooms in each station.

(6) Number of men assigned to duty at each station.

(7) Number of prophylaxes administered during September, 1919.

(8) How are members of command informed about station?

(9) General statement as to the work of stations and any recommendations.

2. Report quoting and answering these questions should be addressed to this office, attention Division of Venereal Disease Control. For posts where there are no outside stations, a statement to that effect will suffice. No carbon copies and no letters of transmittal are required.

(*Cir. Letter No. 309, Surgeon General's Office, September 30, 1919.*)

Venereal Disease Control.

1. There are in and about New York City a number of men, varying from 1,200 to 2,000, who are serving in various offices, recruiting stations, and other detachments and who have been reported as having no venereal disease.

2. Investigation reveals that these men have not been inspected for venereal disease, mainly for the following reasons:

(*a*) The attending surgeon's office has but three medical officers and it is impracticable for them to make the inspections without neglecting other and apparently more pressing work.

(*b*) The attending surgeon's office is under the department and many of the men concerned—i. e., those on recruiting duty and men of the Motor Transport Service—are not, and the attending surgeon has no authority to demand their presence for examination.

3. There are three prophylactic stations in New York City under control of the port of embarkation, none under the department, the attending surgeon, or the Surgeon General's Office.

4. An effort is now being made (*a*) to gather the most accurate statistics possible in regard to venereal disease incidence in the Army, for which purpose it is important that all men be inspected; and (*b*) to establish machinery to replace that which existed during the war for the suppression of these diseases and which has now disappeared with the discharge of its personnel, for which purpose it appears desirable that there be consolidation of venereal disease control in the hands of one officer or office devoted to that one subject in each locality.

5. Information is desired as to conditions existing in your neighborhood, and your suggestions for the correction of faults will be appreciated. Pending receipt of this information and these

suggestions, no action, such as the issue of general orders or regulations, will be undertaken by this office. Prompt reply is therefore requested.

(*Cir. Letter No. 327, Surgeon General's Office, October 15, 1919.*)

Activities of the Dermatological Service Since Its Establishment.

1. Inclosed you will find a classified list of skin diseases. Fill in the number of cases since the opening of your hospital. Any diseases encountered not mentioned on the list may be added.

2. Forward a list of:

(*a*) Present personnel and qualifications.

(*b*) Personnel since opening of the hospital and their qualifications, in the genitourinary and dermatological service.

3. Other data of interest must be added to this report. You are directed to forward this report to the Surgeon General, attention Major Walker, as promptly as possible.

....
(Place.)

REPORT OF CASES OF SKIN DISEASES SINCE ITS ESTABLISHMENT ...., 191..

TO ....

Acne.
Acne varioliformis.
Blastomycosis.
Bromidrosis.
Burns.
Carbuncle.
Cheilitis exfoliativa.
Clavus.
Cornu cutaneum.
Dermatitis exfoliativa.
Dermatitis factitia.
Dermatitis herpetiformia.
Dermatitis acute inf. eczematoid.
Dermatitis medicamentosa.
Dermatitis occupational.
Dermatitis papillaris capillitii.
Dermatitis venenata.
Dermatitis repens.
Dermatitis seborrhoica.
Ecthyma.
Epidermolysis bullosa herediteria.
Epithelioma.
Erysipelas.
Erythema multiforme.
Erythema nodosum.
Erythema pernio.
Erythema toxicum.
Favus.
Fibroma molluscum.
Furunculosis.
Glossititis areata exfoliativa.
Granuloma pyogenicum.
Herpes zoster.
Herpes simplex (severe).
Hydroa vacciniforme.
Hyperidrosis.
Ichthyosis simplex.
Impetigo.
Impetigo contagiosa.
Intertrigo.
Keloid.
Keratosis palmaris and plantaris.
Lichen chronicus circumscriptus.
Lichen planus.
Lipoma.
Lupus erythematosus.
Lupus vulgaris.
Lymphangioma circumscriptum.
Miliaria (severe).
Molluscum contagiosum.
Paronychia.
Pediculosis capitus.
Pediculosis corporis.
Pediculosis pubis.
Pellagra.
Pityriasis rosea.
Pityriasis versicolor.
Pompholyx.
Pruritis cutaneous.
Pruritis ani.
Psoriasis.
Purpura.
Scabies.
Scleroderma.
Sebaceous cyst.
Sporotrichosis.
Sycosis coccogenous.
Tinea circinata.
Tinea crusis.
Tinea tonsurans.
Tinea unguis.
Tuberculide pap. necrotis.
Ulcer traumatic.
Ulcer varacose.
Urticaria.
Varacella.
Variola.
Verruca.
Vitiligo.
Xanthoma tub. multipiex.
Xeroderma pigmentosa.

(*Cir. Letter No. 78, Surgeon General's Office, February 6, 1919.*)

HOSPITALS.

Efficiency Board.

1. Referring to paragraph 16 of letter from this office dated February 19, 1918 (subject: Administration), while the Efficiency Board will meet, as heretofore, every two weeks for the discussion of policy, equipment, and general administration of the hospital, the report of the meeting of the board with its action will not be submitted to this office, unless there is some particular question to be brought to the attention of the Surgeon General or some definite recommendation to be made.

(*Cir. Letter from the Surgeon General, September 7, 1918.*)

Hospital Construction.

1. Your attention is invited to a study of available space in general hospitals, as shown on hospital chart, dated February 15, 1919 (D–820).

2. It will be noted that 22,619 beds are occupied. In this connection, reference should be made to the fact that since October 1, 1918, the number of beds occupied in general hospitals has varied but little, as on October 1 there were 20,556 general hospital beds occupied. From that date to the present, there has been a slight decline and a very slight rise. For the last six weeks there has been no change in the number of cases constantly sick in general hospitals, and this in spite of the fact during this period many cases have been returned to general hospitals from overseas. It will be realized that all unnecessary construction work not begun should be prevented; your assistance in this matter is requested. There is, therefore, now no longer any necessity to increase the bed capacity of your general hospital. The bed capacity referred to is that given in the first column of the hospital table above referred to. However, important work, either additions, repairs, or betterments, which are well under way, should, under existing orders of the War Department, be completed.

3. Any items of construction other than repair or required betterments for your existing capacity which have not been begun by the constructing quartermaster and which, in your opinion, are now not required, should not be begun. You are requested, therefore, to confer with the constructing quartermaster and notify him and also this office of the items thus omitted.

(*Cir. Letter No. 96, Surgeon General's Office, February 19, 1919.*)

Care of the Dead.

1. Numerous complaints reach this office alleging defective embalming and improper clothing of the dead. Attention is invited to the following quotation from paragraph 87, Army Regulations:

> When death occurs at the hospital, the surgeon will promptly notify the embalmer employed under contract, if such services are required, and will see that the remains are prepared properly and in accordance with sanitary regulations. If there should be no contract embalmer, the duty of employing an undertaker will devolve upon the quartermaster; but no undertaker will be employed whom the surgeon considers not competent. The responsibility of the surgeon for the proper care and preparation of the remains will not cease until they are removed by the quartermaster for interment or shipment.

2. The full responsibility rests with the surgeon for the preparation and for the proper care of the remains until they are removed by the quartermaster for interment or shipment. With a view to insuring proper attention, the commanding officer of every hospital should require that the body of every deceased soldier be carefully inspected by a medical officer after it has been placed in the casket, and that a written report of such inspection be made to him, and that this report be filed in the hospital. Whenever practicable, the remains should be embalmed at the hospital and held at the hospital until they are taken charge of by the quartermaster for shipment or interment. Frequent inspections should be made while the undertaker is at work with a view to determining if he is efficient and reliable. In all cases the body should be completely and properly clothed.

(*Cir. Memo. from the Surgeon General, January 23, 1918.*)

Autopsies.

1. In an opinion of October 6, 1917, the Acting Judge Advocate General stated as follows:

> I think that there can be no question but that military authority over all persons who are members of the Army of the United States is sufficient to authorize the performance of a necropsy in all cases contemplated if there is sound military reason therefor. It is not within my province to express my opinion upon the question whether such military reason exists.

2. The following indorsement on a letter to the Inspector General regarding the policy of the Surgeon General's Office is quoted for your information:

[2d ind.]

S. G. O. 707, Autopsies. HHJ: AMV.

War Dept., S. G. O., February 25, 1918. To The Adjutant General of the Army.

1. Returned. It is impracticable to state in detail the specific circumstances which would justify post-mortem examination in each case. In general, it may be said that if it were practicable to hold post-mortem examination after all deaths that great good to the service and medical science would result. Post-mortem examination is essential in the management of epidemics where sudden death may result from unrecognized meningitis, bubonic plague, typhus fever, or cholera. There is no question about the necessity for autospy in all suspected cases of poisoning and in all cases presenting a medicolegal aspect, Post-mortem examination following death from processes well recognized prior to death almost invariably yields information which is instructive and of great value and importance in the treatment of the living. In these cases, too, more accurate statements can be made for the records of the sick and wounded and for The Adjutant General's Office. It is thought that autopsies should be considered the usual procedure where facilities are at hand for the performance of this work. Medical officers have been carefully instructed regarding the proper preparation of bodies after autopsies.

3. Commanding officers of hospitals will be held responsible for the necessity of performing post-mortem examinations, for the manner in which the post-mortem examinations are made, and for the proper preparation of the bodies thereafter as required by Army Regulations.

(*Cir. letter, Surgeon General's Office, March 1, 1918.*)

Autopsies.

1. I am inclosing herewith a copy of a circular letter of instructions issued by The Adjutant General's Office on June 12, 1918, on deceased soldiers.[1]

2. In paragraph 1 it should be noted that telegraphic instructions of March 9, 1918, which called for written permission from the commanding general for the performance of autopsies, is superseded by the circular order of June 12, 1918. In paragraph 6 it will be noticed that the commanding officer of the hospital, or the senior surgeon present, is designated as the responsible person who will decide if an autopsy is to be performed or not.

3. The sound military reason required is the same as the reason for performing an autopsy heretofore; that is, the study of the natural history of the disease in question is a sound military reason even when the cause of death in that particular case is known. It is essential from a military point of view that autopsies be performed until the causes of the prevailing diseases are well understood and until suitable therapeutic and prophylactic measures have been elaborated to cure and prevent the lesions found at autopsy.

(*Cir. Letter, Surgeon General's Office, September 30, 1918.*)

Care of the Remains of Deceased Soldiers.

1. Attention of all concerned is invited to paragraph 87, A. R., as amended, to letter A. G. O., June 12, 1918 (copy attached), particularly the last sentence thereof, to memorandum from this office dated January 23, 1918 (copy attached), and to extract from letter from this office dated January 28, 1918 (copy attached).

2. In view of certain complaints received in this office, it is desired that every possible precaution be taken to insure the proper preparation of the remains of deceased military personnel. As far as practicable, the embalming should be witnessed by a medical officer. Thoracic, abdominal, and pelvic cavities should be injected when necessary. The arterial injection should be thorough. All orifices should be properly plugged or otherwise closed. The penis should be tied. Great care must be taken that incisions are securely sewed up and that the chance for leakage of fluid from the body is reduced to the minimum. If an autopsy has been performed the intestines and stomach should either be removed from the body or else punctured in many places and partially filled with embalming fluid to prevent putrefaction. In case of infectious disease, the inspecting officer should determine that the preparation for shipment conforms with the law.

3. In this connection attention is invited to the following quotation from Medical War Manual No. 6, Laboratory Methods of the United States Army, pages 91 and 107, second edition:

> Throughout the dissection great care must be taken to avoid mutilating or disfiguring the body. No incision should be made which can not be closed and covered from view when the body is prepared for burial. It is the duty of the pathologist to assure himself in each case of the restoration of the body, and especially of the face and hands, to a presentable appearance.

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[1] (See infra.)

This should not be easily intrusted to a strange undertaker, and in general it is safest to have the embalming performed in the morgue of the hospital and the body inspected after its completion. Directions are given below for carrying out this procedure.

The statements made above that the body must leave the morgue in a presentable condition, verified by the pathologist, may be repeated with advantage here. Aside from the ordinary justice of this demand, it is to the interest of the pathologists to exercise extreme care in this regard, since the shipment of a neglected body may result in an interruption of pathological studies or legal complications.

Embalming.—The embalming of the head is readily done by the undertaker when the chest is open, but in his absence may be done very easily by anyone else.[1] The undertaker's pressure bottle with several tubes armed with long metal cannulæ, which are tied into the cartoids and subclavian arteries, is most convenient. Pressure is obtained with a pump. If this is not available, an alpha enema syringe will suffice. The nozzle is tied into the upper thoracic aorta. Of course, the open end of the aorta as well as any leaking arteries (internal mammaries) must be closed with clamps or tied.

Undertaker's embalming fluid or a 10 per cent solution of formalin in water, to which a few drops of eosin solution are added to give it the faintest tinge of pink, may be used. As the fluid is pumped into the arteries and begins to drive blood before it out of the veins the face and ears must be massaged and molded with a gauze sponge into a natural pose, with eyes and lips closed. The hands should also be massaged until white. When the tissue becomes blanched and firm the process is complete. The same process is applied to the legs, the fluid being injected through the femoral arteries. Some formalin should be allowed to stand for a time in the body cavity.

Closure of incisions.—After the brain has been removed, sawdust in a bag should be put into the cranium or it may be filled with plaster of Paris. In the removal of the cranium the temporal muscles should be pushed back and not cut away. The calvarium is fitted in place and held by stitches taken through these muscles; or if the saw cuts are allowed to cross for an inch at the point where they meet behind the ear, bandages may be worked into these slits and pinned together over the top of the calvarium.

The greatest care must be devoted to obtaining an exact and lasting adjustment of the calvarium before the scalp is pulled into place and molded over it. The incision is most carefully sutured and the hair made to cover the suture as completely as possible.

The body cavity is sponged out dry and filled with sawdust, oakum, or cotton waste. This should be packed tightly into the pelvis to prevent leakage. The place of the neck organs must be filled with some substance, such as cotton, which will allow of the neck's being molded into a natural form. Paper is laid over the material in the body cavity and the sternum replaced. The incision is closed by a continuous suture, the needle passing from within out and the twine being held tight after each stitch. It is knotted at both ends and finally buried by taking a long stitch to one side and cutting it off close to the skin.

The incision in the back through which the spinal cord was removed and that in the thigh for the removal of bone marrow are packed with cotton waste and tightly sutured in the same way. All blood stains are removed before the body is handed over to the undertaker. While it is the business of the undertaker to make the body presentable, the pathologist is held personally accountable for making sure that no body is allowed to leave the autopsy room until this is done.

4. The inspecting medical officer should satisfy himself not only that the body is properly embalmed, but also that it is suitably clothed and that the casket is presentable. A certificate to this effect should be prepared at once and properly filed.

5. In general hospitals it is thought that the duty of inspecting the dead should not be left to the officer of the day, but should be permanently assigned to some individual, preferably an officer of the laboratory service.

6. Commanding officers of general hospitals and surgeons of all other commands should at once assure themselves that the contract embalmer is competent. (A. R. 47, as amended.) In general hospitals the commanding officer will cause the quartermaster to determine in each instance whether the caskets and outer boxes furnished by the undertaker meet the requirements of the Government's contract. Report of the quartermaster regarding this matter should be filed.

JUNE 12, 1918.

From: The Adjutant General of the Army.
To: All department, division, and port of embarkation commanders and commanders of all excepted places.
Subject: Deceased soldiers.

1. The following instructions supersede those in telegram from this office of March 9, 1918 (722.2 Misc. Div., A. G. O.):

2. Numerous complaints have been received by the War Department to the effect that proper care is not being taken of remains of deceased soldiers. It is the duty of post, camp, and cantonment surgeons to see that regulations relating to the disposition of remains of deceased officers and

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[1] If shaving is necessary, it must be done before the face is embalmed.

soldiers, nurses, and field clerks are complied with, and division and post commanders will be held responsible that the regulations are obeyed.

3. Attention is invited to paragraph 87, A. R., which is to be amended by inserting after the word "officer" in line 1, the words "soldier, nurse, or field clerk"; and the fifth subparagraph will be amended by changing the period at the end of the paragraph to a comma and adding, "except transportation may be issued for one attendant to accompany the remains and for return of such attendant to proper station when death occurs within the continental limits of the United States." A general order will be issued authorizing the furnishing of transportation to civilian attendants accompanying the remains of deceased officers, soldiers, nurses, field clerks, or civilian employees only when such attendants are civilian employees in the military service.

4. Paragraph 167 will be rescinded. This with the change in paragraph 87 prevents any distinction in the quality and cost of caskets or in the cost of preparation for burial of the remains of officers and enlisted men. The changes in paragraph 87 will provide also for the purchase of a flag as one of the elements of expense.

5. Attention is invited to paragraph 1173, Army Regulations, which provides for proper clothes for interment, and to letter from this office of June 4, 1918 (Publ. Div. 421, A. G. O.), which directs that the articles of uniform to be furnished deceased soldiers shall consist of the following:

1 coat, cotton or woolen, O. D.
1 pair of breeches, cotton or woolen, O. D.
1 pair drawers, cotton or woolen.
1 undershirt, cotton or woolen.
1 pair stockings, cotton or woolen.
1 collar, white.

Unless otherwise desired by relatives, deceased officers and enlisted men will be buried in the uniform prescribed for the command at the time of death. A presentable uniform will be provided in each case.

6. Complaints have also been made that autopsies have been held on bodies of deceased soldiers in various camps and cantonments. While military authority is sufficient to authorize autopsies if there be sound military reason therefor, they should not be resorted to, unless such reason exists. Commanding officers of hospitals or the senior surgeon present will be held responsible for the necessity of performing post-mortem examinations, manner in which post-mortem examinations are made, and for the proper preparation of the bodies thereafter.

7. Your attention is also directed to the last two subparagraphs of paragraph 87 of the present A. R. Post and division commanders will immediately inform themselves of character and competency of local undertakers, and if considered not first class, steps will be taken to assure the presence at posts, camps, and divisions of men competent to prepare properly remains for interment or shipment; and contract may be made to secure services of competent persons as contemplated in paragraph 551, A. R. No remains will be buried or shipped from a post, division, camp, or cantonment without being inspected by the surgeon after all arrangements have been completed for interment or shipment.

By order of the Secretary of War:

F. W. LEWIS, *Adjutant General.*

Letter of S. G. O. to A. G. O.

JANUARY 23, 1918.

From: The Surgeon General, United States Army.
To: The commanding officer.
Subject: Hospital regulations.

1. The following features of hospital administration have been the subject of frequent complaint, and the Surgeon General directs that special attention be paid to them:

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(*c*) *Care of the dead.*—Provisions of Army Regulations, as laid down in paragraphs 87, 162½, 167, and 824, will be strictly complied with. Your attention is called to the last sentence of paragraph 87, which reads as follows: "The responsibility of the surgeon for the proper care and preparation of the remains will not cease until they are removed by the Quartermaster for interment or shipment."

1. Such precautions as the attaching of tag showing name, rank, organization, or other data regarding the deceased, as may be deemed necessary while patient is yet in the ward, where such information may be obtained in an accurate manner.

2. Inspection of all bodies by a designated officer, such as registrar or quartermaster, to see that embalming, clothing, and other items of preparation have been properly attended to.

3. Collection for filing of receipt from the undertaker or embalmer, showing name of deceased, whether or not post-mortem examination was made, whether or not the vessels of the head and neck were properly injected, that body was properly clothed in uniform, address to which body was to be shipped or delivered, and any other item deemed necessary for the protection of the hospital, and for the proper care and delivery of remains to the designated relative or other person.

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By direction of the Surgeon General:

Major, Medical Corps.

JANUARY 23, 1918.

Memorandum for all division surgeons, and surgeons of ports of embarkation, and for commanding officers of general, base, embarkation, and other hospitals.

1. Numerous complaints reach this office alleging defective embalming and improper clothing of the dead. Attention is invited to the following quotation from paragraph 87, Army Regulations:

"When death occurs at the hospital, the surgeon will promptly notify the embalmer employed under contract, if such services are required, and will see that the remains are prepared properly and in accordance with sanitary regulations. If there should be no contract embalmer, the duty of employing an undertaker will devolve upon the quartermaster; but no undertaker will be employed whom the surgeon considers not competent. The responsibility of the surgeon for the proper care and preparation of the remains will not cease until they are removed by the quartermaster for interment or shipment."

2. The full responsibility rests with the surgeon for the preparation and for the proper care of the remains until they are removed by the quartermaster for interment or shipment. With a view to insuring proper attention, the commanding officer of every hospital should require that the body of every deceased soldier be carefully inspected by a medical officer after it has been placed in the casket, and that a written report of such inspection be made to him, and that this report be filed at the hospital. Whenever practicable, the remains should be embalmed at the hospital and held at the hospital until they are taken charge of by the quartermaster for shipment or interment. Frequent inspections should be made while the undertaker is at work with a view to determining if he is efficient and reliable. In all cases the body should be completely and properly clothed.

By direction of the Surgeon General:

....

Colonel, Medical Corps.

(*Cir. Letter No. 356, Surgeon General's office, November 24, 1919.*)

List of Hospitals Designated for Overseas Cases.

1. The accompanying schedule gives the list of hospitals designated for overseas cases, and will govern for the assignment of such cases until further notice.

2. Copies of this should be furnished to all differentiators charged with the responsibility of determining the assignment of overseas cases to interior hospitals, in order that this work may be uniformly and expeditiously handled.

Amputations (lower extremities only)	General Hospital, No. 3, Colonia (Rahway), N. J.
Amputations (for amputations fingers and toes, see Surgical cases, General).	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 10, Boston, Mass. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 29, Fort Snelling, Minn.
Arthritis, chronic (nontraumatic)	Letterman General Hospital, San Francisco, Calif. Walter Reed General Hospital, Takoma Park, D. C. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 9, Lakewood, N. J. (ambulant cases only). General Hospital No. 10, Boston, Mass. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill.
Blindness, or near blindness	General Hospital No. 7, Roland Park, Md.
Deafness, total or near total	General Hospital No. 11, Cape May, N. J.
Epileptics and mental defectives	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 1, Williamsbridge, N. Y. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 25, Fort Benjamin Harrison, Ind. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. Base hospital, Fort Sam Houston, Tex.

Insane (officers)	General Hospital No. 1, Williamsbridge, N. Y.
Insane (officers and enlisted men)	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 4, Fort Porter, N. Y.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 13, Dansville, N. Y. (no violent, suicidal, or homicidal cases).
	General Hospital No. 25, Fort Benjamin Harrison, Ind.
	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 34, East Norfolk (Pondville), Mass.
	Base hospital, Fort Sam Houston, Tex.
Maxillofacial (injuries of face and jaw)	Walter Reed General Hospital, Takoma Park, D. C.
	General Hospital No. 2, Fort McHenery, Md.
	General Hospital No. 11, Cape May, N. J.
Medical cases, general (including cardiovascular, diabetes, and gassed cases).	Base hospital any National Army camp.
	Base hospital Camp Kearny, Calif.
	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williamsbridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 5, Fort Ontario, N. Y.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 9, Lakewood, N. J. (ambulant cases only).
	General Hospital No. 10, Boston, Mass.
	General Hospital No. 12, Biltmore, N. C.
	General Hospital No. 14, Fort Oglethorpe, Ga.
	General Hospital No. 15, Corpus Christi, Tex.
	General Hospital No. 24, Parkview, Pa.
	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 27, Fort Douglas, Utah.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 29, Fort Snelling, Minn.
	General Hospital No. 31, Carlisle, Pa.
	General Hospital No. 33, Fort Logan H. Roots, Ark.
	General Hospital No. 35, West Baden, Ind.
	General Hospital No. 37, Madison Barracks, N. Y.
	General Hospital No. 38, East View, N. Y.
	General Hospital No. 39, Long Beach, Long Island, N. Y.
	Base hospital, Fort Sam Houston, Tex.
	Base hospital, any National Guard camp (convalescents only).
Neuroses, functional; drug addicts and inebriates.	General Hospital No. 30, Plattsburg Barracks, N. Y.
Orthopedic cases. 1. Deformities of extremities due to or associated with contractures of muscles, ligaments, and tendons. 2. Derangements and disabilities of joints, including articular fractures. 3. Deformities and disabilities of the feet.	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williamsbridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 3, Colonia (Rahway), N. J.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 9, Lakewood, N. J. (ambulant cases only).
	General Hospital No. 10, Boston, Mass.
	General Hospital No. 26, Fort Des Moines, Iowa.

Orthopedic cases—Continued.	
4. Cases requiring tendon transplantation.	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 29, Fort Snelling, Minn.
	General Hospital No. 36, Detroit, Mich.
	General Hospital No. 39, Long Beach, Long Island, N. Y.
Peripheral nerve injuries and paralyses, including healed or unhealed wounds, with or without fracture.	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williamsbridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 3, Colonia (Rahway), N. J.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 11, Cape May, N. J.
	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 29, Fort Snelling, Minn.
Speech defects (which are not neurotic)	General Hospital No. 11, Cape May, N. J.
Surgical cases, general	Base hospital, any National Army camp.
1. Unhealed wounds of soft parts in general.	Base hospital, Camp Kearny, Calif.
	Walter Reed General Hospital, Takoma Park, D. C.
2. All fractures, except articular fractures where the joint lesion is the major condition. This will include unhealed or healed wounds, nonunion, delayed union, or malunion.	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williamsbridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 3, Colonia (Rahway), N. J.
	General Hospital No. 5, Fort Ontario, N. Y.
	General Hospital No. 6, Fort McPherson, Ga.
3. All osteomyelitis and all bone sinuses.	General Hospital No. 9, Lakewood, N. J. (ambulant cases only).
	General Hospital No. 10, Boston, Mass.
	General Hospital No. 14, Fort Oglethorpe, Ga.
4. Thoracic, abdominal, and genitourinary injuries.	General Hospital No. 15, Corpus Christi, Tex.
	General Hospital No. 24, Parkview, Pa.
	General Hospital No. 26, Fort Des Moines, Iowa.
5. Injuries and tumors of blood vessels.	General Hospital No. 27, Fort Douglas, Utah.
	General Hospital No. 28, Fort Sheridan, Ill.
6. Amputations, fingers and toes	General Hospital No. 29, Fort Snelling, Minn.
	General Hospital No. 31, Carlisle, Pa.
	General Hospital No. 33, Fort Logan H. Roots, Ark.
	General Hospital No. 35, West Baden, Ind.
	General Hospital No. 37, Madison Barracks, N. Y.
	General Hospital No. 38, East View, N. Y.
	General Hospital No. 39, Long Beach, Long Island, N. Y.
	Base Hospital, Fort Sam Houston, Tex.
	Base hospital, any National Guard camp (convalescents only).
Tuberculosis, pulmonary	General Hospital, Fort Bayard, N. Mex.
	General Hospital No. 8, Otisville, N. Y.
	General Hospital No. 16, New Haven, Conn.
	General Hospital No. 17, Markleton, Pa.
	General Hospital No. 18, Richland (Waynesville), N. C.
	General Hospital No. 19, Oteen (Biltmore), N. C.
	General Hospital No. 20, Whipple Barracks, Ariz.
	General Hospital No. 21, Denver, Colo.
Venereal diseases, and their sequelæ (where venereal diseases are major disability).	Base hospital, any National Army camp.
	Base hospital, Camp Kearny, Calif.
	Base hospital, any National Guard camp (convalescents only).
	General Hospital No. 5, Fort Ontario, N. Y.

Wounds or injuries of the skull or brain (including traumatic epilepsy) and injuries or diseases requiring surgical treatment of importance of the eye, ear, nose, and throat.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 11, Cape May, N. J.
Wounds or injuries of the spinal cord and organic disease of nervous system.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 3, Colonia (Rahway), N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 11, Cape May, N. J. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn.
Patients who will be benefited by waters of Hot Springs, Ark.	Army and Navy General Hospital, Hot Springs, Ark.

(*Cir. Letter No. 5, Surgeon General's Office, January 3, 1919.*)

Revised List of Hospitals Designated for Overseas Cases.

Amputations	All amputations arriving at port of embarkation, Hoboken, N. J., will be sent to General Hospital No. 3, Colonia, N. J. All amputations arriving at port of embarkation, Newport News, Va., will be sent to Walter Reed General Hospital, Takoma Park, D. C.
The commanding officers of General Hospital No. 3, Colonia, N. J., and Walter Reed General Hospital, Takoma Park, D. C., will recommend for transfer amputation cases to amputation centers nearest their homes.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 3, Colonia, N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 10, Boston, Mass. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 29, Fort Snelling, Minn.
Arthritis, chronic (nontraumatic)	Letterman General Hospital, San Francisco, Calif. Walter Reed General Hospital, Takoma Park, D. C. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 9, Lakewood, N. J. General Hospital No. 10, Boston, Mass. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill.
Blindness	General Hospital No. 7, Roland Park, Md.
Blindness, partial	General Hospital No. 2, Fort McHenry, Md.
Deafness, total or near total	General Hospital No. 11, Cape May, N. J.
Drug addicts and inebriates	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. Base hospital, Fort Sam Houston, Tex. General Hospital No. 1, Williamsbridge, N. Y. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 25, Fort Benjamin Harrison, Ind. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. General Hospital No. 30, Plattsburg Barracks, N. Y. General Hospital No. 26, Fort Des Moines, Iowa.
Epileptics and mental defectives	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 1, Williamsbridge, N. Y. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 25, Fort Benjamin Harrison, Ind.

Epileptics and mental defectives (cont.).	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 29, Fort Snelling, Minn.
	Base hospital, Fort Sam Houston, Tex.
Eye, ear, nose, and throat, wounds and injuries or diseases requiring surgical treatment of importance.	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williamsbridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 11, Cape May, N. J.
Insane (officers)	General Hospital No. 1, Williamsbridge, N. Y.
Insane (officers and enlisted men)	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 4, Fort Porter, N. Y.
	General Hospital No. 5, Fort Ontario, N. Y.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 25, Fort Benjamin Harrison, Ind.
	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 34, East Norfolk (Pondville), Mass.
	Base hospital, Fort Sam Houston, Tex.
Maxillofacial (injuries of the face and jaw)	Walter Reed General Hospital, Takoma Park, D. C.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 11, Cape May, N. J.
	General Hospital No. 40, St. Louis, Mo.
Medical cases, general (including cardiovascular, diabetes, and gassed cases).	Base hospitals, Bowie, Tex.; Devens, Mass.; Dix, N. J.; Dodge, Iowa; Gordon, Ga.; Grant, Ill.; Jackson, S. C.; Kearny, Calif; Lee, Va.; Lewis, Wash.; Meade, Md.; Pike, Ark.; Shelby, Miss.; Sherman, Ohio; Taylor, Ky.; Upton, N. Y.
	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williams Bridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 5, Fort Ontario, N. Y.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 9, Lakewood, N. J.
	General Hospital No. 10, Boston, Mass.
	General Hospital No. 12, Biltmore, N. C.
	General Hospital No. 14, Fort Oglethorpe, Ga.
	General Hospital No. 22, Philadelphia, Pa.
	General Hospital No. 24, Parkview, Pa.
	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 27, Fort Douglas, Utah.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 29, Fort Snelling, Minn.
	General Hospital No. 31, Carlisle, Pa.
	General Hospital No. 32, Chicago, Ill.
	General Hospital No. 35, West Baden, Ind. (no patients after April 15).
	General Hospital No. 36, Detroit, Mich.
	General Hospital No. 38, East View, N. Y.
	General Hospital No. 40, St. Louis, Mo.
	General Hospital No. 41, Fox Hills, Staten Island, N. Y.
	Base Hospital, Fort Sam Houston, Tex.

Nervous system, organic disease of	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 1, Williamsbridge, N. Y. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 3, Colonia (Rahway), N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 11, Cape May, N. J. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. Base hospital, Fort Sam Houston, Tex.
Neuroses, functional	General Hospital No. 30, Plattsburg Barracks, N. Y.
Orthopedic cases: 1. Deformities of extremities due to or associated with contractures of muscles, ligaments, and tendons. 2. Derangements and disabilities of joints, including articular fractures. 3. Deformities and disabilities of the feet. 4. Cases requiring tendon transplantation.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 1, Williamsbridge, N. Y. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 3, Colonia (Rahway), N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 9, Lakewood, N. J. General Hospital No. 10, Boston, Mass. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. General Hospital No. 32, Chicago, Ill. General Hospital No. 36, Detroit, Mich. General Hospital No. 38, East View, N. Y.
Peripheral nerve injuries and paralyses, including healed or unhealed wounds, with or without fracture.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 3, Colonia (Rahway), N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 10, Boston, Mass. General Hospital No. 11, Cape May, N. J. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. General Hospital No. 41, Fox Hills, Staten Island, N. Y. Base Hospital, Fort Sam Houston, Tex.
Speech defects (which are not neurotic)	General Hospital No. 11, Cape May, N. J.
Surgical cases, general: 1. Unhealed wounds of soft parts in general.	Base hospitals, Bowie, Tex.; Devens, Mass.; Dix, N. J.; Dodge, Iowa; Gordon, Ga.; Grant, Ill.; Jackson, S. C.; Kearny, Calif.; Lee, Va.; Lewis, Wash.; Meade, Md.; Pike, Ark,; Shelby, Miss.; Sherman, Ohio; Taylor, Ky.; Upton, N. Y.
2. All fractures of upper extremities, except articular fractures, where the joint lesion is the major condition. This will include unhealed or healed wounds, nonunion, delayed union, or malunion. (For fractures of lower extremities see below.) 3. All osteomyelitis and all bone sinuses.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital, No. 1, Williamsbridge, N. Y. General Hospital, No. 2, Fort McHenry, Md. General Hospital, No. 3, Colonia (Rahway), N. J. General Hospital, No. 5, Fort Ontario, N. Y. General Hospital, No. 6, Fort McPherson, Ga. General Hospital, No. 9, Lakewood, N. J. General Hospital No. 10, Boston, Mass. General Hospital No. 14, Fort Oglethorpe, Ga.

Surgical cases, general—Continued. 4. Thoracic, abdominal, and genitourinary injuries. 5. Injuries and tumors of blood vessels. 6. Amputations, fingers and toes.	General Hospital No. 22, Philadelphia, Pa. General Hospital No. 24, Parkview, Pa. General Hospital, No. 26, Fort Des Moines, Iowa. General Hospital, No. 27, Fort Douglas, Utah. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. General Hospital No. 31, Carlisle, Pa. General Hospital No. 32, Chicago, Ill. General Hospital No. 35, West Baden, Ind. General Hospital No. 36, Detroit, Mich. General Hospital No. 38, East View, N. Y. General Hospital No. 40, St. Louis, Mo. General Hospital No. 41, Fox Hills, Staten Island, N. Y. Base hospital, Fort Sam Houston, Tex.
Surgical cases, fractures of the lower extremities, except articular fractures, where the joint lesion is the major condition. This will include unhealed or healed wounds, nonunion, delayed union, or malunion.	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 3, Colonia (Rahway), N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 10, Boston, Mass. General Hospital No. 24, Parkview, Pa. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. General Hospital No. 31, Carlisle, Pa. General Hospital No. 36, Detroit, Mich. General Hospital No. 38, East View, N. Y. General Hospital No. 41, Fox Hills, Staten Island, N. Y. Base hospital, Fort Sam Houston, Tex.
Tuberculosis, pulmonary	General Hospital, Fort Bayard, N. Mex. General Hospital No. 8, Otisville, N. Y. General Hospital No. 16, New Haven, Conn. General Hospital No. 19, Oteen (Biltmore), N. C. General Hospital No. 20, Whipple Barracks, Ariz. General Hospital No. 21, Denver, Colo. General Hospital No. 42, Spartanburg, S. C.
Venereal diseases and their sequelæ (where venereal diseases are major disability.)	Base hospitals, Bowie, Tex.; Devens, Mass.; Dix, N. J.; Dodge, Iowa; Gordon, Ga.; Grant, Ill.; Jackson, S. C.; Kearny, Calif.; Lee, Va.; Lewis, Wash.; Meade, Md.; Pike, Ark.; Shelby, Miss.; Sherman, Ohio; Taylor, Ky.; Upton, N. Y. General Hospital No. 5, Fort Ontario, N. Y.
Wounds or injuries of the skull or brain (including traumatic epilepsy)	Walter Reed General Hospital, Takoma Park, D. C. Letterman General Hospital, San Francisco, Calif. General Hospital No. 1, Williamsbridge, N. Y. General Hospital No. 2, Fort McHenry, Md. General Hospital No. 3, Colonia (Rahway), N. J. General Hospital No. 6, Fort McPherson, Ga. General Hospital No. 11, Cape May, N. J. General Hospital No. 26, Fort Des Moines, Iowa. General Hospital No. 28, Fort Sheridan, Ill. General Hospital No. 29, Fort Snelling, Minn. Base hospital, Fort Sam Houston, Tex.

Wounds or injuries of the spinal cord	Walter Reed General Hospital, Takoma Park, D. C.
	Letterman General Hospital, San Francisco, Calif.
	General Hospital No. 1, Williamsbridge, N. Y.
	General Hospital No. 2, Fort McHenry, Md.
	General Hospital No. 3, Colonia (Rahway), N. J.
	General Hospital No. 6, Fort McPherson, Ga.
	General Hospital No. 11, Cape May, N. J.
	General Hospital No. 26, Fort Des Moines, Iowa.
	General Hospital No. 28, Fort Sheridan, Ill.
	General Hospital No. 29, Fort Snelling, Minn.
	Base hospital, Fort Sam Houston, Tex.
Patients who will be benefited by waters of Hot Springs, Ark.	Army and Navy General Hospital, Hot Springs, Ark.

(*Memo., Surgeon General's Office, March 28, 1919.*)

Fire Protection.

1. Reports of inspections of the Sanitation Division of this office indicate that at many hospitals there is inadequate protection against loss of life by fire. It is therefore directed that you thoroughly investigate the conditions obtaining at your hospital and send to this office, attention Sanitation Division, a full report, together with a detailed statement of measures you have taken or will take to remedy existing defects.

2. In addition to other protective measures, particular attention is directed to the necessity of having a sufficient number of carefully trained fire guards on duty day and night.

3. As an aid in making your investigation, there is inclosed herewith a list of hospitals, submitted by the Sanitation Division of this office, at which there was found inadequate protection against fire on the days indicated.

4. In addition to the report called for in paragraph 1, it is directed that you submit a special "fire-protection report" at the end of each month. This should not be a mere perfunctory statement, but must indicate clearly—

(*a*) The adequacy or inadequacy of protection, and

(*b*) What should be done to remedy the deficiencies.

By direction of the Surgeon General.

C. R. Darnall,
Colonel, Medical Corps, Executive Officer.

Inc.

Copy to department surgeons; surgeons, ports of embarkation; camp surgeons; surgeons, independent posts; commanding officers, general, base, and port of embarkation hospitals; commandants, Army Medical School and medical officers' training camps; attending surgeon, Washington, D. C.

DEFICIENT FIRE PROTECTION.

January 11, 1919, General Hospital No. 8, Otisville, N. Y.—Serious, but being improved. Buildings of inflammable "insulite."

January 11, 1919, General Hospital No. 3, East Norfolk, Mass.—Hydrants needed near storehouse, heating plant, and garage.

December 15, 1918, General Hospital, Fort Bayard, N. J.—Apparatus ordered but not received.

December 14, 1918, General Hospital No. 31, Carlisle, Pa.—Some deficiencies which are being corrected.

October 22, 1918, General Hospital No. 3, Colonia, N. J.—Fire risk very serious. "Insulite" construction. Water supply inadequate.

December 27, 1918, General Hospital No. 2, Fort McHenry, Md.—Shortage of water, due to too small main.

December 10, 1918, General Hospital No. 23, Hot Springs, N. C.—An extremely dangerous fire trap.

December 22, 1918, General Hospital No. 21, Denver, Colo.—No auto fire engine or other auto apparatus.

December 7, 1918, General Hospital No. 13, Dansville, N. Y.—Water pressure not always adequate. Fire-fighting force just being organized.

January 9, 1919, General Hospital No. 10, Branch, West Roxbury, Mass.—Hose in poor condition, but new hose has been required for.

January 10, 1919, General Hospital No. 30, Plattsburg Barracks—Water supply not believed adequate for large fire. Underwriter extinguishers said to have been recently recharged but dates on tags over nine months old.

December 15, 1918, General Hospital No. 7, Baltimore, Md.—Hose ordered four months ago not received.

December 18, 1918, General Hospital No. 35, West Baden, Ind.—Protection of outbuildings inadequate, but steps underway to remedy.

December 11, 1918, General Hospital No. 24, Park View, Pa.—No automatic alarm system in offices, storerooms, and other places vacant at night.

March 29, 1918, General Hospital, Fort Sam Houston, Tex.—Permanent fire risk due to extreme crowding of frame wards.

November 14, 1918, base hospital, Camp Beauregard, La.—Need more hydrants and hose. Have no annunciator system.

September 14, 1918, base hospital, Camp Gordon, Ga.—Water pressure low and often no water at all. Road to hospital so muddy in wet weather that camp apparatus can not get up the hill.

October 16, 1918, base hospital, Camp Upton, N. Y.—More hose carts needed for convalescent wards.

January 12, 1919, base hospital, Camp Upton, N. Y.—Owing to distant location and poor roads, additional hose cart needed for K section.

October 28, 1918, base hospital, Camp MacArthur, Tex.—More hose needed.

November 11, 1918, base hospital, Camp Wheeler, Ga.—Only six fire plugs for hospital covering 60 acres.

September 5, 1918, base hospital, Camp Eustis, Va.—No fire system organized. Fire-alarm system needed.

November 2, 1918, Jefferson Barracks, Mo.—Protection only fair. Water pressure very low, but being improved. Some patients on third floor.

(*Cir. Letter No. 46, Surgeon General's office, Jannary 21, 1919.*

Fire Prevention—Hospitals.

1. The following letter has this day been sent to the Domestic Operations Division, Office of the Director of Storage:

(1) The Medical Department will be very glad to avail itself of the services of the fire and accident prevention branch. It is requested that the fire and accident prevention branch instruct its inspectors to inspect the fire-prevention organization, equipment, etc., at military hospitals. A copy of this letter will be the authority for making the inspection. Commanding officers of hospitals have been advised of this arrangement and have been furnished a copy of this letter.

2. Commanding officers of hospitals will afford inspectors from the fire and accident prevention branch every facility for making inspections and will cooperate with that service in every way in correcting defects found.

(*Cir. Letter No. 92, Surgeon General's Office, February 15, 1919.*)

Fire-Fighting Facilities of Hospitals, Inspection of.

1. The following letter has been furnished Capt. Harry L. Collins, fire department expert of the fire and accident prevention branch, Purchase, Storage and Traffic:

(1) This will introduce Capt. Harry D. Collins, fire department expert, fire and accident prevention branch, Purchase, Storage and Traffic, who will visit the various hospitals for the purpose of inspecting the fire-fighting facilities and the organization of the fire companies, and reviewing the fire drills at the hospitals under the jurisdiction of this office.

(2) Captain Collins will advise and assist in the organization and training of the fire-fighting units, and in organizing and conducting fire drills, and in such other items relative to fire prevention as may be necessary in order to eliminate fire hazards, as far as possible, under existing conditions.

(3) It is requested that you afford Captain Collins every facility for prosecuting this work.

(*Cir. Letter No. 143, Surgeon General's Office, March 19, 1919.*)

Library Organization and Use.

1. Library facilities of the hospital should be organized and administered so as to be of greatest possible use to all members of the post. Centralization of libraries with books properly shelved, classified, and catalogued, and with ready means for distribution will add much to the usefulness of the equipment. In the hands of a trained librarian, such a library becomes a fine agency for improving morale.

2. Inclosed is copy of report from United States Army General Hospital No. 20, Whipple Barracks, Ariz., telling briefly what has been done there to improve the library facilities.

(*Cir. Letter No. 69, Surgeon General's Office, February 3, 1919.*)

Light Diets.

1. The Inspection Division has reported unsatisfactory conditions regarding light diets which exist in some of the hospitals. The complaint has been that the light diet consists of full diet

minus meat, which of course did not add to the digestibility of the food remaining, and in many cases removed the only readily digestible part of the meal.

2. The Division of Food and Nutrition was asked to submit sample menus for light diets, which are furnished herewith.

(*Cir. Letter from the Surgeon General, March 2, 1918.*)

Reduction of Ration Allowance for Patients.

1. Upon the recommendation of the Surgeon General, the Secretary of War approved, under date of May 26, 1918, a reduction in the ration allowance for patients from 60 cents to 50 cents per day in all United States Army hospitals in this country except tuberculosis hospitals.

(*Cir. Letter from the Surgeon General, June 1, 1918.*)

Mess Management.

1. Attached hereto is a copy of the report of a survey of the messes at the base hospitals, Camps Dix, Zachary Taylor, Sherman, and Custer, with which is included a series of general suggestions and recommendations as to mess conditions of base hospitals in general.

2. Many of the suggestions and recommendations contained in the report are considered valuable and are submitted for your information.

June 21, 1918.

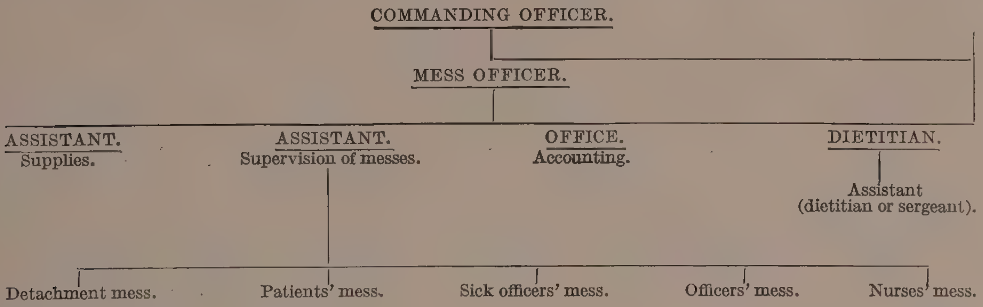
REPORT AND RECOMMENDATIONS BASED PRIMARILY ON STUDIES MADE IN THE MESSES OF THE BASE HOSPITALS AT CAMPS DIX, TAYLOR, SHERMAN, AND CUSTER.

A. Organization and Administration.

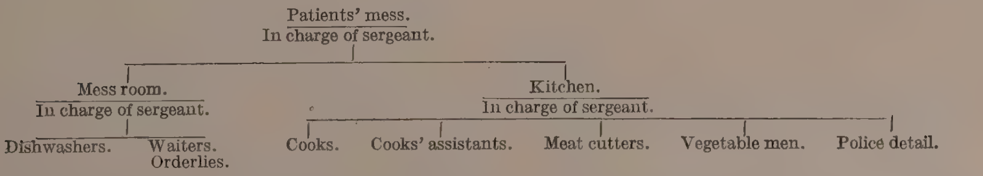
Apparently this is the weakest point in most of the messes. The mess officers do not seem to realize the importance of a thorough organization of their mess. Every stage in centralization has been found from the complete independence of the messes one from the other to complete centralization where all were under a single mess officer.

The latter form of organization has been found to be the most economical both of time and material. In this way the mess officer is enabled to buy for the entire hospital and so is in position to demand better prices and accommodations. Such a consolidated mess demands a mess officer who is above all things an executive and an organizer.

In some hospitals where this system has been adopted the mess officer has been made coordinate with the chiefs of services and attends all meetings of the chiefs of services. This plan enables him to defend his personnel, a point of some practical importance, and also enables him to work with better cooperation with the other departments of the hospital. The organization of the personnel may be somewhat as follows:


COMMANDING OFFICER.
MESS OFFICER.
ASSISTANT.
Supplies.
ASSISTANT.
Supervision of messes.
OFFICE.
Accounting.
DIETITIAN.
Assistant
(dietitian or sergeant).
Detachment mess.
Patients' mess.
Sick officers' mess.
Officers' mess.
Nurses' mess.

The organization of the individual messes may be:


Patients' mess.
In charge of sergeant.
Mess room.
In charge of sergeant.
Kitchen.
In charge of sergeant.
Dishwashers.
Waiters.
Orderlies.
Cooks.
Cooks' assistants.
Meat cutters.
Vegetable men.
Police detail.

In the smaller messes the organization may be reduced. Thus, a sergeant should be able to handle both dining room and kitchen for the officers' and sick officers' mess. It is usually more satisfactory to put a nurse in charge of the nurses' mess. The sergeant in charge of the detachment mess and of the patients' mess in the smaller hospitals can also take immediate charge of either the mess hall or kitchen. In smaller hospitals, too, the mess officer himself will be able to assume the duties of the mess assistant.

1. *Mess officer.*—The mess officer, as above noted, is responsible to the commanding officer of the hospital under Army Regulations for the condition of all messes belonging to the hospital.

He is responsible for quantity, quality of food, and proper preparation and service. He is responsible for all funds necessary to run the several messes, and in some places the canteen. He therefore makes all collections and pays all bills. He must keep a set of books adequate to account for all transactions and to show at all times the exact financial condition of the storeroom and of each of the messes under him. Since ultimately he is responsible for the condition of all of the messes, he should make a thorough daily inspection of each and should hold such conferences with his personnel as seem desirable.

He should satisfy himself by frequent inspections made at definite intervals that all men coming in contact with the food in any way are free from all diseases which might be communicated to those dining in any of the several messes. The commanding officer should determine what such diseases are, the appropriate intervals of inspection, and the proper officers to make the inspections. Carriers of typhoid and persons suffering from venereal or any type of contagious disease should be eliminated from the personnel until free from the disease.

It is the duty of the mess officer to satisfy himself of the ability and integrity of the personnel under him, and to see that they are properly instructed and trained.

2. *Supplies assistant.*—He should be made responsible to the mess officer for the procurement, storage, and issuing of stores and supplies. Thus, he should be charged to see that the stores are properly kept, that an actual count is made of all stores received, and that proper records are kept. He should also keep a record of all goods issued to the several organizations and see that each is charged with all goods received by it.

3. *Mess assistant.*—He should be made immediately responsible for discipline, training, and efficiency of the personnel and cleanliness and economy in the several messes. He should receive the menus from the several sergeants and from the dietitian. These menus are to be turned over to the stores assistant in ample time to allow the purchase and delivery of the necessary goods.

He should be accountable to the mess officer for the amount of garbage from the several messes and should take such steps as are necessary to reduce it to the lowest possible level. He should weigh the garbage from both the dining rooms and kitchens of the several messes at intervals determined by the mess officer.

He should render such assistance to the dietitian as is necessary to insure complete cooperation of the cooks and storeroom personnel.

4. *The dietitian.*—It should be her duty to prepare menus for all patients in the hospital. She should see that the food is properly prepared and served. She should see that the menus are served as written.

She should be present in the kitchen during the preparation of meals. However, during the service she should divide her time between the wards and mess hall in such a way that she may know whether the food is being properly served throughout the hospital. She or her assistant should be held responsible for the issuing of the food to the wards. She should also report to the commanding officer defects of service found in the wards, that these may be corrected through proper channels. Defects of preparation or service found in the mess hall or kitchen should be reported to the mess officer.

She is directly responsible for the preparation of special diets and for special items or modifications of the three listed diets. She should, however, be supplied with sufficient help to relieve her from all the details of preparation of these items. It should be her duty to advise with the heads of the service, ward surgeons, or nurses as may be necessary to insure the patients getting food that is adapted to their needs while at the same time the kitchen may be relieved of preparing unnecessary specials.

5. *The mess sergeants.*—They have direct charge of their respective kitchens and mess halls. They are responsible for the promptness of the preparation of the meals and for the condition in which the food is turned out. They are responsible to the mess assistant for the condition and conduct of the men in their charge and for the proper condition of the kitchen. They prepare all menus not prepared by the dietitian.

In very large messes, they may be provided with one or more assistants. In the patients' mess it may be desirable that the mess sergeant have two assistants—one in charge of the main kitchen, the other of the mess hall.

The diet kitchen should be in charge of an assistant dietitian or a competent corporal or sergeant responsible to the dietitian.

6. *Office sergeant.*—He should be responsible to the mess officer for the paper work of the mess. This will include property and personnel in so far as records and paper work are concerned. Included with this would be such records as are necessary in conjunction with the Medical inspection of the personnel. He also is responsible for the mess bookkeeping.

Defense of his personnel by the mess officer has been mentioned. This is necessary for the reason that it seems all but a universal custom to use the mess as a reservoir from which men may be drawn for all the other services at the pleasure of the detachment commander. The result is that unless the mess officer actively defends his personnel his organization will continuously be disrupted by shortage of men and constant change. It is not fully borne in mind that specialization exists, or at least should exist, in a kitchen, as well as in other places, and that the mess officer has as much right to the men he has trained as any other officer has to his men.

The officers' mess and the nurses' mess usually offer the most difficulty. It must be distinctly understood that all complaints must come through the mess officer. Further, in so far as the writer has observed, it does not pay to replace him by another man. When there is difficulty it may be well to have a mess committee, who advises with the mess officer in regard to policy. Much the same may be said of the nurses' mess.

B. Menus and Diets.

It has been observed that patients are generally overfed. Thus, at one hospital they were getting over 3,600 calories as a general average of all patients fed and in another over 3,400. These were not higher in so far as one could judge than were the others. There is also a tendency to feed too much fat. In one hospital they were even getting more fat than carbohydrate as judged by the number of calories released. While it should be borne in mind that the average man in the military hospital is not as sick a man as is the average man in civil hospital, and hence may require somewhat more food, it is believed that these are not ideal conditions and that it costs nothing but some effort to correct them.

This overfeeding, apparently, grows out of two causes: First, the kitchen personnel has usually learned to cook for active men and it is hard to adjust their ideas to patients' needs; second, there is a general practice of messing well men from the patients' kitchen. The reasons for this practice in the different places are different and it is usually difficult to suggest a means of avoiding it. However, there will be a tendency to supply good food suitable to the well men and as a consequence the patients are improperly fed.

It is recommended first, to remove all nonpatients from the patients' mess; second, to have all menus written by the dietitian, who further should see that the meals are served as she intended them to be.

C. Physical Equipment.

I. STRUCTURAL.

1. *Storerooms.*—(*a*) *For staple goods.*—In the hospitals, as originally built, there has not been enough storage space provided for any form of kitchen supplies. There is need of additional space for the storage of nonperishable goods which could best be supplied by the completion of the wing shown on the blue prints and indicated as a bakery. In the larger hospitals it might be advisable to extend this room twice as far as indicated in the plans. In any case a receiving platform should be built along one side or the back to facilitate the unloading of trucks.

(*b*) *Vegetable cellar.*—There is no special provision for the storage of vegetables and similar goods. At Camp Devens they had attempted to improvise one, but with poor success. Each hospital should be provided with a cellar insulated against temperature changes. Such a cellar could be erected either below or alongside of the general storehouse. It could be constructed of cement and hollow tile at a cost that would not be prohibitive, and without doubt it would soon pay for itself in preventing spoilage. Two of the last four hospitals visited had already asked for such a cellar. The need was felt by all.

(*c*) *Cold storage.*—At Camp Custer, with about 700 patients, they had approximately twice the cold-storage space provided any of the other 15 hospitals. They were using all that they had to good advantage and felt that more was needed; that is to say, the cold-storage facilities in all of the other hospitals visited is very inadequate. It should be doubled or tripled at the earliest possible moment. The season when it is needed is now on, and the lack of additional space can not help but result in loss of goods and danger of food poisoning.

In some of the camps they do not use their ice boxes to the best advantage. This is usually due to lack of system in removing goods. Some plan should be developed so that the large ice boxes are not opened more than two or three times each day. The ammonia-cooling plants are generally working satisfactorily. At Camp Sherman they had connected two small ice boxes with it and were cooling these in addition to the two large ones. One of these small boxes was in the diet kitchen and the other in the main kitchen. These were being kept colder and more sanitary than it would have been possible to keep them with ice.

2. *Latrines.*—There is no latrine conveniently located in the regular plan. The nearest one is in the exchange building and this is, of course, not under the control of the mess officer. It is frequently only indifferently policed. Further, there is a considerable amount of time lost by the men in going to and from it. The distance from the kitchen also encourages side excursions and loss of time and makes it difficult for the sergeant to keep a check on his men. Further, this arrangement makes it absolutely impossible to insure the washing of hands after visits to the latrine.

At Camp Custer a bathroom had been erected opening off from the vegetable-preparation room. Whether or not the shower bath is necessary, it certainly was appreciated by the men at that place and will be much more so as the season becomes hotter. The plan, however, keeps the men under the eye of the sergeant, and if the washbowl is placed just outside of the door, rather than inside, the matter of hand washing may be controlled. This matter of insuring the proper washing of hands after visits to the latrine is very important and the above is the best control which has been suggested.

3. *Bakery.*—The bakery at Camp Custer is the only one that has been seen. There they were making good use of it. Bread crumbs were made into crumb cookies and went much better than the usual bread pudding. A considerable amount of corn bread was being prepared as well. At General Hospital No. 1 a portable oven was provided and this, too, was being put to good use.

It seems to me doubtful whether a complete bakery, as at Camp Custer, is warranted, but there is a general feeling that the oven space provided by the ranges is not sufficient. A large portable oven would be a very profitable addition to the kitchen. This could be added, probably, in all cases without additional construction and at a cost that would not be prohibitive.

4. *Diet kitchen.*—The diet kitchens in most places seem to be sufficient to meet the demands upon them. (See, however, special memorandum from Captain McCaughey, of Camp Sherman.) In only one case have I seen the broiler used. In this case it had been tried and its use abandoned. I would suggest that they be removed and credit obtained for them, if possible. On the other hand, a stock boiler, similar to the ones in the large kitchen, but smaller—say, 30 gallons—would be put to very profitable use.

The diet kitchen would be more logically placed if it were at the right-hand side of the main kitchen instead of in the rear, as at present, the reason for this being that all of the material prepared in the diet kitchen goes to the wards. It is then the logical place for loading the trucks taking food to the wards. To do this each of the trucks must pass through the main kitchen twice for each meal. This results in confusion in both diet and mess kitchen at a time when it can illy be afforded. If the diet kitchen were placed as suggested, the trucks would be loaded through a window opening into the corridor without entering either kitchen.

While it may not be expedient to make this change at once, it is thought that it is well to have it in mind in case any of the kitchens should require enlargement.

5. *Floors.*—Wooden floors have been found in use in most of the kitchens. These are becoming very disreputable and it is not possible to keep them in a sanitary condition. They become rough and leaky so that there is a constant drip through the floor to the ground below. The ground below the kitchen is rapidly becoming soggy and foul while the joists are constantly soaked with the scrub water from the kitchen floor. All of these floors should be replaced by cement or other form of plastic floor at once. This seems to be one of the most pressing needs found.

EQUIPMENT.

(A) *Steam tables.*—As mentioned in a special memorandum for Camp Dix, two large steam tables should be supplied, one to take care of food going to the wards and one for food for the mess hall. They had just received such tables as are needed at Camp Sherman, though they had not yet been installed. These tables were supplied by the John Van Range Co., of Cincinnati.

(B) *High-pressure steam apparatus.*—In Camps Taylor and Sherman they had installed additional apparatus as follows:

2 stock pots (two-thirds jacketed, iron, 60 gallons).
2 roasters (full jacketed, iron).
1 vegetable steamer, iron.

These in addition to the former equipment will, it is felt, be adequate to supply any probable demands to be made upon them.

Both the aluminum and iron stock pots are giving better satisfaction than the copper ones. The aluminum also has certain advantages over the iron. However, it is felt that with the present aluminum equipment iron will be just as satisfactory for any additions that may be required.

(C) *Potato peelers.*—The type of peelers with carborundum surface, both on the disk and on the sides of the hopper, are much the most satisfactory. The Stirling is a machine of this type. Those with the effective surface only on the disk are too slow and do not do satisfactory work. No more of this type should be purchased and those in use should be discarded as rapidly as possible.

(D) *Ice-cream freezer.*—The ice-cream freezer seemed to be satisfactory at Camp Dix, the only place where it has been seen in use. At Camps Taylor and Custer they were just being installed. At Camp Sherman it had not yet been received at the kitchen. At Camp Custer there was only one can supplied, which, of course, would render the machine useless until more were obtained. In order that the cream can be supplied to the wards in acceptable shape, one small storage can and tub should be supplied for each ward. These cans should be of 2 or 3 gallons capacity. At Camp Taylor the weather was very hot and it was proving almost impossible to serve ice cream in the wards and have it frozen when it reached the patient. The same condition will obtain in the other camps as the season advances.

(E) *Ranges and ovens.*—There was general agreement that there is sufficient range surface at present, but, as generally, it was felt that there is not enough oven space. At Camp Custer, as noted above, they have provided themselves with a bakery. At one or two other camps they have requested that they be supplied with an oven. It is recommended that a large portable oven be supplied to all the hospital kitchens. (See discussion above under Bakery.)

(F) *Dish washing.*—The dish washer being regularly supplied is not satisfactory. It does not remove food particles, and so it is customary to wipe the dishes after it. This is not an inviting nor a sanitary practice. It is suggested that in supplying new equipment, or in replacing present machines, that a different type of machine be supplied. They had a very satisfactory one at General Hospital No. 1, and I understand that they were planning to have one of the same type at Camp Dix to replace that regularly supplied.

(G) *Service dishes.*—These are generally enameled ware and are badly chipped. In some hospitals the breakage of delftware is very high; in others, it is not at all excessive. Breakage would seem then not to be a necessary objection to the delftware but rather a matter of personal discipline.

(H) *Tables.*—There is a sufficient supply of first-class sanitary topped tables and in the main these are well cared for. In one or two places there was a tendency to mar the steel tops with cleavers—seemingly a practice that could easily be avoided.

It would be a distinct advantage to supply the kitchens with a butcher's meat block in addition to the one supplied to the meat cutters.

(I) *Small equipment.*—This class of equipment, as knives, spoons, cleavers, boilers, roasting pans, etc., seems to be supplied in abundance and in the main is well cared for.

(J) *Bread baskets.*—In the report of Camp Dix Hospital the absence of proper bread storage was pointed out. At Camps Sherman and Custer bread was received from the bakery in laundry baskets. At Camp Custer the baskets were used for storage as well and this seemed to be the best practice so far seen. By it the repulsive habit of hauling bread in open wagons is avoided, as is undue handling in the store room. A very desirable addition to the baskets was made at Camp Sherman. Here the baskets were lined with a heavy white drill or light duck. This lining could easily be removed and laundered. Baskets enough should be supplied so that the bread need not leave them from the bakery until it is wanted for use. Bread cutters do not seem to be of much practical use.

D. Ward Service.

At Camp Custer the ward carriages were loaded the most rapidly and with the least confusion of any place I have seen. Here they had made a long opening or counter window in the wall between the kitchen and corridor. The carriages passed along this and received their food from retainers placed just inside the kitchen. At Camp Taylor they had much the same system except that they were serving through the regular windows. It might be said in passing that this long window at Camp Custer was not screened nor was there any means of closing it. With these two additions and with the addition of a steam table behind it, the plan there would offer the best plan of serving the carriages so far seen.

The fact that the ward carriages themselves are not satisfactory has already been called to attention. The food containers do not hold enough food and the trays do not hold enough water to be of much value. They appeal to one as being petty. There is no proper provision made for carrying such material as bread, butter, etc. At present, things of this nature are piled on top of the containers in the tray, a rather questionable practice in itself, and then it is crushed down with the heavy cover. In wards requiring large service, food of this character often reaches its destination in an untempting condition. Provision of some separate container, as a small tin bread box, would avoid this trouble.

In the wards there is no uniform practice of service, even in a given hospital. Perhaps it is the most general practice for the nurse to serve the food from the containers in which it is received and to send it to the wards by the orderlies or convalescent patients. In some cases the supply of service dishes or bed trays is insufficient and the service is not as tasty as it should be. This is not necessarily so, however. In one ward at Camp Taylor the nurse was sending out very attractive trays and one of her patients told me that it was "just like home." One of the nurses at Camp Dix was doing even better work. Such cases are, however, too rare.

The nurses do not, in general, seem to be instructed as to the possibilities of the steam tables provided them. Those at Camp Custer were a notable exception, however. At this place they were using the tables for three distinct purposes.

1. To warm the food received from the kitchen.
2. To do certain forms of light cooking.
3. To sterilize their dishes after washing.

Major Irons, at Camp Custer, felt that the latter use was a very important one and made it a general hospital rule that all dishes in the wards be sterilized either by steam or a disinfectant.

E. The Convalescent and Isolation Wards.

While it is felt that it will probably be physically possible to feed all the men for which the hospital was intended, there was a general feeling among the commanding officers that a separate kitchen and mess hall should be provided for the men from the convalescent wards. This was particularly pronounced at Camp Custer, where these wards were from a half to three-quarters of a mile from the mess hall.

In the same way it is generally felt that the isolation wards should be provided with their own kitchens. These wards are far from the kitchen and are not on the corridor, so that food can not be carried to them in the ward carriages. For this reason the food does not reach the wards in good condition. This is particularly true in snowy or muddy weather. And, again, there is a general feeling that there should be no connection between these wards and the general kitchen.

F. Commuted Subsistence.

At Camp Lewis the ration for May, 1918, was valued at 64½ cents; the commuted hospital ration at that time was 60 cents. During the present month, with the reduced hospital ration, the disparity must be even greater. When the hospital ration was 40 cents such conditions were common. It has been suggested by several commanding officers that it would be fairer to allow the hospitals the value of the usual Army ration, plus a certain percentage. This plan would automatically take care of fluctuations in price, such as have been common during the present war. There possibly would be some difficulty in establishing the ration for isolated hospitals, but it would seem that this could be adjusted in some way which would be more satisfactory than the present method. The present ration allowance is, I believe, about 2 cents too low for the four hospitals included in this report at the present time.

G. Conservation and Reduction of Plate Waste.

(A) *Conservation in stores and kitchen.*—This point would be covered by proper mess organization. It reduces itself to proper buying and care of stores and discipline in the kitchen. In no place was the waste excessive in either of these places.

(B) *Mess hall.*—Ordinarily the waste from the mess hall is larger than is necessary. The mess officers usually maintain that this is unavoidable because of the shifting clientele. This, however, is a false assumption, as may be shown from figures obtained at Camps Devens or Taylor. At the latter hospital the edible waste was reduced to 0.03 of 1 pound per man per day. At Devens the record was even better.

The method adopted at Taylor was very simple. The food was placed upon the table and the men allowed to help themselves. They were instructed to take all that they wanted, but no more; that there would be plenty for rehelpings so long as anyone cared for more. They were then further instructed that they were expected to eat all that they had taken upon their plates. The rest was simply a matter of seeing that each carried out the duty assigned; i. e., a matter of effective kitchen organization and discipline in the mess hall.

(C) *Waste from the wards.*—This is probably the highest per capita waste in the whole camp and presumably should normally be so. However, at Camp Taylor the edible waste from all the wards averaged for the week studied 0.31 pound per man per day. This probably could be still further reduced. The method consisted simply in careful adjustment of the amount of food sent to the wards, observation of all waste returned, and report of any wards returning an excessive amount. Wards returning excessive amounts of waste were reported by the mess officer to the commanding officer, who instructed the ward surgeons that it was not to be continued.

At Camp Custer they were developing the plan further, and when in operation the waste from the wards at that place would undoubtedly be reduced to a similar low level.

(*Cir. Letter from the Surgeon General, July 16, 1918.*)

Milk Supply.

1. It has been brought to the attention of this office that in several instances, on account of local conditions, hospitals find it impossible to obtain a milk supply which is in every way satisfactory; in some instances the price being exorbitant, in others the quality and cleanliness of the milk being very unsatisfactory.

2. The attention of all commanding officers who find it impossible to obtain a satisfactory milk supply is called to the possibilities of the method of reconstituting milk from milk powder and sweet butter. This method is now in use at some of the Army hospitals and has proven to be entirely satisfactory as well as economical.

3. This method consists essentially in remixing the skimmed milk powder and sweet butter with a proper amount of water, pasteurizing the entire mixture at 145° for 30 minutes, and then immediately emulsifying and cooling the product. The process of emulsification is so complete that the fat does not separate as cream. The same process serves also to thoroughly aerate the milk so that it has a good fresh taste.

4. The cost of the mechanical appliances necessary to install a plant with a capacity of 50 gallons per hour is in the neighborhood of $1,725. This is a maximum figure, covering freight and installation. Where steam and refrigeration are available, the cost would be materially less.

5. At present market prices, viz, about 45 cents per pound for sweet butter and 24 cents per pound for skimmed milk powder, milk can be reconstituted at a cost of 8.8 cents per quart. The overhead expenses, including ice, fuel, and labor, will not exceed 1 cent a quart on a total output of 200 gallons a day. The total cost of 3½ per cent milk therefore would not exceed 40 cents per gallon.

6. There is an assured supply of milk powder sufficient to furnish 200 gallons of milk to each of the base hospitals daily. The company which supplies the skimmed milk powder is willing also to undertake to arrange for a sufficient supply of sweet butter. There are now in this country and Canada 30 plants with a total capacity of 32,000,000 pounds of skimmed milk powder annually.

7. Certified analyses of milk produced in this manner have shown a bacterial count in the neighborhood of 2,000 per c. c. of the finished milk after pasteurization, emulsification, and cooling. As a matter of fact, there are three different points at which pasteurization is completed. The milk is pasteurized before it is separated, the cream is pasteurized before it is churned into sweet butter, and, finally, the skimmed milk powder, cream, and water are pasteurized in the process of mixing. This final pasteurization which may take place within the walls of the hospital at the time the milk is prepared for consumption brings the sanitary control entirely within the hands

of the hospital staff. Adding to this the advantages of producing a milk of any desired fat content and of having it thoroughly emulsified and freshly aerated, it is believed this method affords the most satisfactory supply of milk yet devised.

8. In the event it is considered desirable to install this apparatus for reconstituting milk, requisition should be made to the Supply Division of the Surgeon General's Office for permission to purchase the necessary apparatus from the hospital fund.

(*Cir. Letter from the Surgeon General, July 22, 1918.*)

Control of Waste in Hospital Messes.

1. In military hospitals the waste of food is widely variable. In one hospital it averaged 0.4 ounce per man per day; at another it was 32.3 ounces per man per day. The control of waste is largely a matter of administration.

2. The first and chief source of food wastage may be found in the kitchen, the result of the burning of food or other carelessness by cooks. Foodstuffs can be greatly conserved by putting all bones, suitable liquor from vegetables, and appropriate but left-over articles of food through the stock pot. Such action will insure an abundance of soups.

3. Food remaining from a meal should be used while fresh and palatable; if small in quantity, side dishes for small groups may be made. Proper cooking and service will reduce waste. Attention to preliminary food preparation will also diminish it. Care in peeling potatoes and other vegetables; in thoroughly emptying the contents of cans, as of milk, etc., vegetables, and other dishes. The equipping of kitchens with modern culinary machinery will greatly reduce waste of food and expense of messing.

4. Economical and rapid methods of food distribution and service, together with attractiveness in serving of meals, will also diminish food wastage. Food served in mess halls may be distributed by either or both of two methods—the so-called "line system" and table service. If the line system is used, alert, intelligent men should be placed in charge of the dispensing. Care must be exercised to insure the serving of food expeditiously, hot, and palatable. Men in line, upon presenting their plates, should indicate their desire as to what and how much is wanted. First helpings should be small; additional helpings may be served when requested. The appetites of soldiers should be satisfied; contentment, as regards food, will promote morale.

5. When table service is used, the same general methods will apply. Irrespective of the system of serving used, provided it is practicable, it is thought best to place bread, cream, and sugar upon the table. Bread should be cut in half slices of medium thickness. Men should be permitted to serve themselves, the only restriction being that all taken should be eaten. As to cream, condensed milk is usually served. There can be no objection, from a dietary standpoint, to liberality in its use. Milk is the best source of calcium and growth vitamines. If practicable, the use of 4 ounces of condensed milk or 8 ounces of fresh milk daily per man is desirable. Experience has shown that the placing of sugar upon the tables adds but slightly to its consumption. At one hospital an additional amount of 0.063 pound per man resulted, the daily ration cost being augmented by only one-half cent per man. Liberality in the service of such basic foods is recommended, provided matters of supply permit. In this connection it may be stated that the conservation of foodstuffs and the running of an economical mess will be materially aided by a well-disciplined kitchen and dining-room personnel as well as the maintenance of good order among the diners. The leaving of a clean plate should be insisted upon and disciplinary action taken should repeated warnings be unheeded. In some institutions the inauguration of the squad service has been beneficial. By this method the men are marched to the dining room in small groups and in charge of noncommissioned officers, who are responsible for the proper service of the food and for the control of wastage.

6. In serving food in wards it should reach its destination in an attractive condition and should be served expeditiously and tastily. Hot viands should be hot, and cold should be cold. Ordinarily in ward service a high degree of individual attention is feasible. When physical and sanitary conditions permit, food carts or containers may be taken into the wards and patients served directly therefrom. Convalescent patients may often be used to advantage in helping to serve. Satisfactory and attractive ward feeding can only be had by hearty cooperation upon the part of nurses, orderlies, and patients. Patients needing forced feeding, but having capricious appetites, are best served at individual and attractively prepared bedside tables. It should be remembered that the appetites of convalescent patients often may be stimulated by serving small portions, with the privilege of additional helpings if desired. Frequent inspection of and checking

of patients in hospital wards at meal time by ward surgeons will prove advantageous from therapeutic and dietetic points of view.

7. Appendix A and Appendix B, attached hereto, illustrate forms used at different hospitals for the recording of waste.

APPENDIX A.

(Kitchen record.)

UNITED STATES ARMY BASE HOSPITAL, FORT RILEY, KANS.

Section............ For week ending.................., 1918.

	Plate waste.			Diet waste.			Kitchen waste.			Total waste per day.	Tin cans (number opened).	Number fed.	Average waste per man.
	A. M.	M.	P. M.	A. M.	M.	P. M.	A. M.	M.	P. M.				
Saturday													
Sunday													
Monday													
Tuesday													
Wednesday													
Thursday													
Friday													

APPENDIX B.

(Consolidated record in use at Camp Custer Base Hospital.)

Garbage report, Tuesday, August 20, 1918.

Ward.	Patients.	Not.			Total per day.	Ounces per patient.	Consisted of—
		B.	D.	S.			
1	11	22	18		40	3.63	Oatmeal and jam.
2	26		22		22	.89	
3	18		9		9	.50	
4	11	7	8		15	1.45	Do.
5	Closed.						
6	30		14		14	.46	Potatoes.
Receiving ward	**						
Patients' mess	86		8	7	15	.17	Crumbs, cake.
Sick officers	8	15	40	16	71	8.87	Scrap and meat.
Subtotal	524				602	1.15	
Nurses	105				175	1.66	
Officers' mess	125				177	1.41	
Detachment	584	64	7	33	104	.18	Bread, cake, potato, tomato.
Total	1,311				1,058	.80	

(*Cir. Letter No. 20, Surgeon General's Office, January 15, 1919.*)

Rate of Commutation of Rations for Sick.

1. The following advance copy of C. A. R. No. 82, dated November 4, 1918, is furnished for your information and guidance:

ARMY REGULATIONS.

CHANGES }
No. 82 }

WAR DEPARTMENT,
Washington, November 4, 1918.

Paragraph 1212, Army Regulations, 1917, is changed as follows:

1212 (changed by C. A. R., No. 66, W. D., 1917). While sick in hospital the ration of enlisted men, of applicants for enlistment, of civilian employees who are entitled to subsistence at public expense, and of prisoners will be commuted as follows:

For all hospitals for tuberculosis patients, regardless of bed capacity, at the actual cost of the ration plus 50 per cent.

For other hospitals: Those having a bed capacity of 100 or less, at the actual cost of the ration plus 50 per cent; those having a capacity of more than 100 but less than 500, at the actual cost of the ration plus 40 per cent; those having a capacity of 500 or more but less than 1,000, at the actual cost of the ration plus 30 per cent; those having a capacity of 1,000 or more, at the actual cost of the ration plus 25 per cent.

The ration of members of the Nurse Corps on duty in hospital will be commuted at the rate applicable to patients therein.

The commutation herein referred to will be paid to the surgeon by the post quartermaster, or such officer of the Quartermaster Corps as may be designated. (*C. A. R. No. 82, November 4, 1918.*) (*Cir. Letter from the Surgeon General, November 4, 1918*).

Subsistence for Patients En Route.

1. It has been brought to the attention of this office that in many instances when patients had been transferred from one hospital to another in the interior, proper arrangements had not been made for the furnishing of food to the patients en route.

2. The Red Cross canteen service has offered that, whenever notified, they stand ready to provide food for patients en route in such quantity and quality as may be required.

3. It is directed that whenever patients are to be transferred to other hospitals, if satisfactory arrangements have not been made at the time of their departure for subsistence en route, that the Red Cross representative be notified and requested to arrange with the Red Cross canteen service in order that the patients may be properly provided for in this respect.

(*Cir. Letter from the Surgeon General, November 16, 1918.*)

Organizations and Establishments within Territorial Limits, Control of.

The attention of all concerned is directed to paragraph VI, General Orders, No. 23, 1918, which is quoted below:

> VI. 1. Hereafter all units, institutions, establishments, and organizations within the territorial limits of a department will be under the control of the department commander for purposes of administration, supply, and discipline, except the following:
>
> (*a*) All exempted by paragraph 191, Army Regulations, 1913, as corrected to April 15, 1917, and as changed by C. A. R., No. 57, War Department, 1917, and by paragraph 193½, Army Regulations, 1913, C. A. R., No. 58, War Department, 1917.
>
> (*b*) The division camps and cantonments exempted by General Orders, No. 137, War Department, 1917, and Section IV, General Orders, No. 19, War Department, 1918.
>
> (*c*) The ports of embarkation.
>
> (*d*) The permanent remount depots at Front Royal, Va., Fort Reno, Okla., and Fort Keogh, Mont.
>
> (*e*) The auxiliary remount depots and the animal embarkation depots covered by General Orders, No. 4, War Department, 1918.
>
> 2. The divisional camps and cantonments embrace not only troops constituting the divisions, but also all units, establishments, and utilities in their immediate vicinity and closely associated with them. All provisions of general orders, bulletins, circular letters, or other instructions in conflict with the above are rescinded.
>
> (323.741—524.211, A. G. O.)

For posts and camps under the jurisdiction of department commanders, the proper channels of communication are:

(*a*) If the communication is one that should properly go through medical channels, it should be forwarded to or through the department surgeon.

(*b*) If the communication is one that should properly go through military channels, it should be sent to The Adjutant General of the Army requesting that it be forwarded.

(*Office Memo. No. 28, Surgeon General's Office, June 5, 1918.*)

Pay of Enlisted Men Absent from their Organization on Last Day of the Month.

1. The following letter is quoted for your information:

> The Secretary of War directs that you be informed that in the future when a large camp is using civil hospitals for the care of its sick, you will place an officer in charge of all such soldiers as detachment commander of sick in civil hospitals, to whom all service records will be sent and whose duty it would be to prepare muster and pay rolls and attend to the forwarding of mail for members of his detachment.

(*Cir. Letter from the Surgeon General, March 15, 1918.*)

Separation of White and Colored Patients.

1. From information received in this office relative to the care of white and colored patients in the same wards, it appears that it would be a better procedure, and for the best interest of all concerned, to arrange for the care of white and colored patients in separate wards or separate rooms, so far as possible.

2. It is appreciated that at times this might be difficult, if not impossible, as in time of epidemic, etc. Nevertheless, it is felt that the procedure should be carried out as indicated whenever and wherever possible, always keeping in mind that the welfare of the patient, no matter what his race or color, is of first importance.

(*Cir. Letter from the Surgeon General, March 22, 1918.*)

Furlough or Release of Sick in Hospital.

1. It has come to the notice of this office that convalescent patients have applied for furloughs or application has been made by relatives for their transfer to their homes or other hospitals

2. The Surgeon General directs that the commanding officers of all hospitals be notified that no man shall be given a furlough while sick in the hospital until it can be definitely determined that he will not suffer relapse or injury as a result of this furlough, and that commanding officers of hospitals shall be held strictly to account for the issuing of such furloughs and the granting of consent to remove patients from hospital.

(*Cir. Letter from the Surgeon General, March 25, 1918.*)

Admission of Naval Patients to Military Hospitals.

1. Pursuant to informal conference recently between the Reconstruction Division and yourself, the following suggestions are offered as the hospitals to which it will probably be desirable that the naval authorities send patients:

(*a*) *Plattsburg Barracks.*—There will be special facilities there for the treatment of officers and enlisted men suffering from functional neuroses. It is believed that you will find it desirable to take advantage of this place.

(*b*) General Hospital No. 7, at Baltimore, is especially equipped for the care of the blind. You are already using this hospital for such cases.

(*c*) Patients suffering from total deafness, speech defects other than neurotic, may receive special training at General Hospital No. 11, Cape May, N. J. It is thought that you will have need for this service from time to time.

(*d*) For wounds or injuries involving the nervous system, there will be a special service at General Hospital No. 11. For special surgery of the nervous system it may be desirable that you send cases there from time to time.

(*e*) If it is desired to give special attention to amputations, the same may be done at the Walter Reed Hospital.

(*f*) Special orthopedic work will be done at Nos. 3, 6, 9, Walter Reed, and Letterman General Hospitals. This work is now in progress at Walter Reed, Nos. 6, and 9.

2. Instructions have been given to commanding officers of these hospitals to receive naval patients sent to them by proper authority, to give them the necessary treatment, and at the end of that time to report the readiness of patient for discharge from the hospital to the proper naval authorities. It is requested that you make the necessary arrangements for the reimbursement of military hospitals for subsistence, etc.

(*Cir. Letter from the Surgeon General, June 18, 1918.*)

Care of Patients' Clothing.

1. The following is a copy of a report showing system of caring for patients' clothing, which has been adopted and is now in use at the base hospital, Camp Custer, Mich:

> A patient arriving in hospital is taken to his ward, his outer clothes are tagged for identification, taken to the property room, pressed by a steam presser, hung on ordinary clothes hangers, suspended from long racks in property room. Underwear is taken to hospital laundry station in laundry building, suitably marked with marking pins, sample of which is inclosed, and forwarded with hospital laundry to the camp laundry. The hospital is now able to maintain, with fair regularity, a one day or at most two day laundry service from the camp laundry.
>
> A steam presser was obtained on memo receipt from the camp laundry.
>
> It is found that storage of clothes in property room by means of hangers can be accomplished without undue difficulty, and confusion to this property has not arisen.
>
> Patients leaving the hospital present an appearance very much better than under the old system of rolling up clothes and it is believed also that the additional care results in the conservation of the clothes themselves.

2. The plan adopted at base hospital, Camp Custer, Mich., has the approval of the Surgeon General, and it is believed could be adopted with benefit at most of the base and general hospitals.

3. The Surgeon General directs that efforts be made to adopt this or a similar system, and that a report be submitted to this office, showing steps taken.

(*Cir. Letter from the Surgeon General, July 13, 1918.*)

Personnel of the United States Marine Corps Admitted to Army Hospitals from Overseas.

1. It has been brought to the attention of this office that personnel of the United States Marine Corps arriving in the United States from overseas are being admitted to Army hospitals or such civil hospitals as are by special arrangements receiving Army patients. Information with regard to these men is not received either by this office or by the Major General Commandant of the Marine Corps, the latter having brought the matter to the attention of this office on account of his losing track of personnel and for other reasons. It is desired, when practicable, that all marines received in an Army hospital be transferred to the nearest United States naval hospital for further medical and surgical treatment and disposition. It is desired, however, that such patients be retained in the Army hospital until such time as they are able to travel and that no patient will be transferred to a naval hospital unless he is physically able to travel and his condition will not be materially impaired thereby.

2. It is requested that the commanding officers of the Army hospitals be informed with regard to this matter.

3. It is requested that the foregoing be treated as very important and urgent.

(*Cir. Letter from the Surgeon General, September 25, 1918.*)

Admission of Patients of Students' Army Training Corps.

1. The Secretary of War has directed that patients of the Students' Army Training Corps be admitted to any general hospital upon request of any surgeon of a unit of that training corps.

(*Cir. Letter from the Surgeon General, November 26, 1918.*)

Issuance of Passes.

1. Numerous complaints have been received relating to the restrictions in vogue at certain hospitals regarding the issuance of passes to convalescent soldiers, and it appears that there is no uniform policy common to all hospitals.

2. While it is appreciated that it would be practically impossible to adopt any uniform policy, owing to the difference in local conditions, nevertheless, it is desired to promulgate a policy which shall, so far as possible, provide a common procedure for all hospitals. It is believed by this office to be wise to be as liberal as possible in this respect compatible with the interest of the patient and the discipline of the command.

3. To the end that this office may be better informed, it is desired that you forward a brief concise statement outlining the policy which you have adopted with regard to the issuance of passes. This should cover such points as: What restrictions, if any, as to the number of passes issued for any one day and the reasons for such restrictions. What are the general principles governing the issuance of passes, to whom, in what number, for what length of time, and for what purpose?

4. This statement will be forwarded to this office, attention Hospital Division, with the least possible delay.

(*Cir. Letter from the Surgeon General, December 14, 1918.*)

Furloughs for Navy Patients.

1. The following copy of letter received from the Bureau of Medicine and Surgery of the Navy Department is furnished for your information and guidance.

> 1. The bureau has received the following letter from the Major General Commandant, United States Marine Corps:
>
> "It has come to the attention of this office that commanding officers of Army general hospitals where marines are under treatment have declined to grant furloughs. If not inconsistent with your policy, will you please request that all Army general hospitals be informed that they are authorized to grant furloughs to marines under treatment in their hospitals in such cases where the furlough will not be detrimental to the physical condition of the patient and for such length of time as the commanding officer of the hospital may deem advisable."
>
> 2. It will be remembered that those patients are transferred to Army general hospitals for treatment and are considered as patients temporarily absent from Navy hospitals while undergoing treatment. It is the desire of the Major General Commandant and of this bureau that, so far as practical, and not detrimental to the physical welfare of the patient, that reasonable furloughs be allowed.
>
> 3. It is therefore requested that commanding officers of Army general hospitals where Navy patients may be undergoing treatment be informed with regard to this matter.

(*Cir. Letter from the Surgeon General, December 20, 1918.*)

Passes and Furloughs.

1. The following decision of the Secretary of War, relative to the granting of passes and furloughs for patients, is published for the information and guidance of all concerned.

A. R. 106, which limits the number of enlisted men furloughed from any command in the field or at posts to 5 per cent of the enlisted strength present therewith, is interpreted as not applying during the present emergency to patients in general, base, or other military hospitals.

It is the policy of the War Department to liberally grant passes and furloughs for these patients whenever the granting of such will not unfavorably affect the physical condition of the patients. You are directed to inform the commanding officers of the various general hospitals under your jurisdiction of the above.

(*Cir. Letter No. 31, Surgeon General's office, January 17, 1919.*)

Information to the Relatives of Patients.

1. The following letter from the Surgeon General to The Adjutant General is published for the information and compliance of all concerned:

Subject: Modification of A. R. 824.

1. In order to relieve the anxiety of relatives and friends of patients who are now being admitted to the hospitals in this country from overseas, it is desired to send a postal card to the nearest relative of each man, giving the information shown on the attached slip.

2. Information is therefore desired if A. R. 824, as modified by C. A. R. 70, March 16, 1918, can be construed or modified to permit medical officers to "state briefly the nature of the wound, injury, or disease."

3. The demands for this information are very unusual and extremely pressing because of the return of so many sick and wounded men from overseas.

M. W. Ireland,
Surgeon General, U. S. Army.

721.6 Pub. Div. [1st ind.]

War Department, A. G. O., January 21, 1918.
To the Surgeon General:

1. Returned. Paragraph 824 has been amended and your attention is invited to the attached draft thereof as amended. It is not a violation of that paragraph as amended to use the card giving the indicated data in furnishing the information therein authorized to be given concerning sick and wounded officers and enlisted men.

By order of the Secretary of War:

F. W. Lewis, *Adjutant General.*

2. You are therefore directed to have postal cards printed, giving the information substantially as shown below. These postal cards will be mailed promptly upon the admission, transfer, or discharge of all patients who have recently returned from overseas:

U. S. A. .... Hospital ....

...................., ...
(Place.) (Date.)

You are informed that: .... was:
(Christian name.) (Surname.) (Rank.) (Organization.) (No.)

1. Admitted to........................
2. Transferred to...................... } ....
3. Discharged from.....................
(Cross out statement not desired.) (Name of institution.) (Place.) (Date.)

with ....
(State briefly nature of wound, injury, or disease.)

His condition is (excellent, very good, good, fair, poor).
(Cross out words not desired.)

Remarks: ....

....
(Signature of adjutant or registrar.)

Army Regulations.

Changes No. —

War Department,
Washington, January —, 1919.

Paragraph 824, Army Regulations, is changed as follows:

824 (changed by C. A. R. No. 70, W. D., 1918). No information will be furnished by any person in the military service which can be made the basis of a claim against the Government, except it be given as the regulations prescribe to the proper officers of the War, Treasury (including the Bureau of War Risk Insurance), or Interior Departments, or the Department of Justice or the United States Employees' Compensation Commission. Information concerning sick and wounded

officers and enlisted men will be freely conveyed to allay the anxiety of friends; and when, in the opinion of the surgeon, the condition of an officer or enlisted man, by reason of injury or disesase, is serious or is such as to indicate the probability of fatal termination, the surgeon will promptly communicate the fact, by telegraph or mail, as circumstances warrant, to the person designated by the officer or soldier to be notified in case of emergency. If the surgeon has no record of the name and address of such person, he will obtain the information from the officer or soldier or from his organization or station commander in the most expeditious manner practicable. The fact of death may be communicated to relatives, but not circumstances connected therewith which could be made use of in prosecuting claims against the Government. If any person in the military service has knowledge of facts pertaining to the service of an individual who is an applicant for a pension, or for compensation under the war-risk insurance act, he may upon request, if not pecuniarily interested, furnish a certificate or affidavit setting forth his knowledge, but such certificate or affidavit will be furnished only to The Adjutant General of the Army to be forwarded to the proper officer of the Interior Department or of the Treasury Department. Record evidence will be furnished by the War Department only.

The surgeon of a post, through the commanding officer thereof, is authorized to furnish to the health authorities of the State or locality in which the post is situated, in accordance with existing State laws or local ordinances, information concerning all births and deaths in the post, such information to be given on the proper blanks furnished for the purpose by the State or local authorities. Persons in the military service who have knowledge of the facts as to the disability or death of a member of the Military Establishment may execute the required proofs of such disability or death on a claim under any insurance policy (other than a war-risk insurance certificate) held by such member. Available records may be used in making such proof and copies furnished if desired, but such proofs will be furnished only to the insurance company concerned and on application of the insurance company or of the beneficiary interested. Nothing contained in this paragraph shall be construed as prohibiting the furnishing to the Federal Board for Vocational Education such information concerning a disabled soldier's medical history as may be considered valuable in his vocational training. (*C. A. R. No. January —, 1919.*)

[000.71, A. G. O.]

By order of the Secretary of War:

PEYTON C. MARCH,
General, Chief of Staff.

Official:
P. C. HARRIS,
The Adjutant General.

(*Cir. Letter No. 47, Surgeon General's Office, January 23, 1919.*)

Patients' Laundry.

1. Amendments of paragraphs 222 and 267, Manual for the Medical Department, have been approved as follows, and will be promulgated by formal change in due course:

PAR. 222. Strike out the words "before it is put away" in the first sentence, so that that sentence shall read: "The soiled clothing of patients will be washed as a part of the hospital laundry (par. 267)."

PAR. 267. Change second clause so as to read: "second, the washable clothing of patients under treatment in hospital (par. 222)."

2. Commanding officers of hospitals will govern their action accordingly.

(*Cir. Letter No. 71, Surgeon General's Office, February —, 1919.*)

Notices to Friends and Relatives of Patients Going on Furlough.

1. Many men are now being sent home on furlough in the belief that the patients will be more contented and that their recovery will be hastened. It is believed that unless the status upon which the man is sent home is thoroughly understood, through interference from outsiders or the worry of the family, steps may be taken or advice given that will interfere with the further conduct of the case along the lines contemplated.

2. Commanding officers of all hospitals are therefore instructed to send a typewritten copy of the following letter, with such additions in the individual cases as may seem indicated, to the next of kin, in every case where a soldier goes on furlough and is expected to return for further special treatment:

....
(Name of next of kin.)

DEAR SIR OR MADAM: .... has been sent home on
(Name of patient.)

furlough at his own request. It should be understood that he must return at the expiration of his furlough for the completion of his treatment.

This furlough is given in order that he and his family may profit by his presence home during the necessary intervals that must elapse between the various steps of his treatment. It is the Government's desire and intention to give him not only the best of treatment, but to make his convalescence as agreeable and profitable as possible.

It is to be remembered that he is still in the status of a wounded soldier and under the care of the Medical Department of the Army. If anything should occur during this leave that would suggest the need of immediate attention, you are earnestly requested to have him return to his station at once.

It is essential that he be properly fed, that he have the proper amount of rest, and as much time in the open air as possible.

(*Cir. Letter No. 85, Surgeon General's Office, February 12, 1919.*)

Furloughs to Members of Jewish Faith.

From: The Adjutant General of the Army.
To: The chiefs of all staff bureaus, commanding generals of departments and ports of embarkation, and commanding generals and commanding officers of independent camps, cantonments, stations, and other places.
Subject: Granting of furloughs to members of the Jewish faith for Passover.

The Secretary of War desires that furloughs be granted to members of the Jewish faith for Passover from noon April 14 to midnight April 16, 1919, provided this does not interfere with the public service.

(Signed) RALPH HARRISON,
Adjutant General.

[1st ind.]

On copy of:
220.711 (Misc. Div.).
War Dept., A. G. O., February 18, 1919.
To the Surgeon General, who will notify all under his jurisdiction.

By order of the Secretary of War:

(Signed) RALPH HARRISON,
Adjutant General.

[2d ind.]

S. G. O. 220.7 (furlough).
War Dept., S. G. O., February 20, 1919.
To commanding officers, all general and United States Army hospitals; the commandant, Army Medical School; all attending surgeons; W. D. Emergency Dispensary; heads of divisions, S. G. O.

1. Forwarded for the information and guidance of all concerned.

(*Cir. Letter from the Surgeon General, February 20, 1919.*)

Method of Expediting Payment for the Sick and Wounded.

1. In order to expedite payment of soldiers arriving without records fixing their pay status, the inclosed blank, originating in the Office of the Director of Finance, is forwarded herewith in the hope that it may be of assistance at your hospital. The system adopted is briefly outlined below for your information:

Each patient arriving at the hospital is handed a questionnaire within 24 hours after arrival. Questionnaire is then filled in and signed by the patient and collected before he has been removed from the receiving ward. This questionnaire is being used as a basis for the preparation of soldier's affidavit (in duplicate—by carbon process), and when affidavit has been properly executed same is inserted in a supplementary service record, after which soldier's name is placed on a pay roll and payment made within one week from date of arrival.

It may be further remarked that after affidavits have been prepared, they are carefully read over to the soldier and he is questioned whether he fully understands that he is liable to prosecution for any false or fraudulent statement thereon. The duplicate affidavit and the questionnaire are retained in the records of the office preparing and certifying pay rolls.

2. Each hospital should make every effort to locate the soldier's original service record, and on its receipt a comparison should be made of the service record and pay card with the affidavit made out on the inclosed form, in order that any discrepancy may be adjusted on a subsequent pay roll or soldier's final statement in the event of his discharge.

3. This office can not supply these blanks to the various hospitals, and it is proposed that each hospital mimeograph them in sufficient quantity for its use.

[Questionnaire.]

U. S. ARMY GENERAL HOSPITAL No. ....

Serial No. .... Ward No. ....

Have you a pay book .... (If so, turn in with this paper.)

My residence is ....
(Number of street or rural route.) (City, town, or post office.)

My nearest relative is ....
(Name.) (Degree of relationship.)

....
(City, town, or post office; street or rural route.) (State or country.)

I am serving in my .... enlistment period. Accepted for enlistment at ....

I enlisted ...., 191.., at ....

*I was ordered to report for military duty ...., 191.., at ....

by {* the local board of
* the adjutant general of} ....

Reported for duty in person and inducted * at the place and on the date specified * or at ...., 191... Red ink or Serial No. on registration card .... Order No. .... I am entitled to additional pay for ....
(Medal of honor, distinguished-service cross,

....
distinguished-service medal, marksmanship, gunner qualification, or rating, mess sergeant; give date of qualification rating, etc.)

There is due me the sum of $ ...., being the amount due because of class A allotments arbitrarily deducted (give amounts deducted, dates, station, and name of quartermaster if known) ....

I have made the following deposits, ...

Sailed from United States .... 191.., for ....

Arrived in United States .... 191.., from ....

I have insurance and allotments as follows: (*a*) War-risk insurance, $ ....; monthly premium, $ ....; age, ...; total premiums due United States, $ ....; (*b*) class A allotment; (*c*) class B allotment; (*d*) class E allotment; (*e*) second Liberty loan; (*f*) third Liberty loan; (*g*) fourth Liberty loan (show amount due United States, and date of beginning and ending of each allotment) ....

....

I claim refund for Liberty loan allotments as follows (show amounts, months for which deducted, station, and name of quartermaster, if known) ....

....

That the following stoppages are due the United States for (*a*) a. w. o. l.; (*b*) absent from duty under G. O., No. 45, W. D., 1914; (*c*) forfeiture by sentence of court-martial; (*d*) detained pay; (*e*) transportation; (*f*) subsistence; (*g*) equipment; (*h*) clothing; (*i*) reward paid for apprehension of deserter; (*j*) post laundry; (*k*) post exchange; (*l*) company fund; or other indebtedness (give amount of each and data pertinent thereto). That I have received my pay in full to include the month of .... 191.., at ....

....
(Give station and name of quartermaster, if known.)

and have since received the following partial payments ....

....
(Give amount, date, station, and name of quartermaster, if known.)

Other remarks ....

....
(Signature of soldier.)

Date ...., 191...

UNITED STATES ARMY GENERAL HOSPITAL NO. .... AT ....

[Note for soldiers.]

READ THIS CAREFULLY.

This form is handed to you in order that you may furnish on the opposite side such information as is called for thereon. This data will be used for the purpose of preparing pay roll and making payment *in full* of all pay due you.

You will be called upon to make an affidavit and swear to the correctness of your statement before payment is made.

Be careful of your dates.—If you are not certain, think before you make your statement. If another member of your organization is in the hospital, consult him before making statements of which you are not certain.

If this form is received by you before noon, it must be filled out and handed to the nurse on duty in your ward before 4 o'clock p. m., same date. If received after noon, fill out completely and hand to the nurse before 10 o'clock the following morning.

Give all information asked for in full.

Month, day, and year must be given wherever a date is asked for.

(*Cir. Letter No. 164, Surgeon General's Office, April 24, 1919.*)

Soldiers' Pay.

The following indorsement, dated April 19, 1919, from the Director of Finance is published for your information:

> 1. The provisions of Circular No. 88, War Department, 1919, are not mandatory to the extent that they do not require an affidavit to be taken from the soldier upon which to base an adjustment of his pay in the event that the commanding officer is reasonably certain that the statements made by the soldier, due either to intentional falsification or physical disability to make a correct statement of his account, can not be relied upon for a settlement of his account.
>
> 2. The War Department would be lacking in a proper safeguarding of the interest of the Government were it to make payments to soldiers based upon their affidavit when a doubt appeared as to the correctness thereof. In all cases possible, however, the doubt as to correctness of the soldier's statements should be resolved in his favor, as it is imperative that when a soldier's service record and pay card are missing, and no other medium than affidavit to effect payment is possible, that settlement for arrears of pay be made.
>
> 3. It is suggested that in such cases where it appears to the commanding officer that no reliance can be placed upon soldier's affidavit, his account be forwarded to Office, Director of Finance, for adjustment, together with a full statement as to the circumstances of the case, and information as to whether or not efforts have been made to locate the soldier's service record and other papers.
>
> 4. It may further be stated that where a psychiatric patient is discharged from the service an arbitrary payment of $30 in the nature of partial pay may be made to such patient on discharge; also travel pay and bonus of $60, and soldier advised in writing to make claim direct to the Director of Finance, War Department, for any additional amount due him.
>
> By authority of the Director of Finance:
>
> R. L. CARMICHAEL, *Colonel Field Artillery,*
> *in Charge Field Operations Division.*

(*Cir. Letter No. 187, Surgeon General's Office, April 26, 1919.*)

Length of Stay of Overseas Cases in Hospitals.

1. As a matter of interest, the result of the recent canvass of the United States Army general and base hospitals in relation to the turnover of overseas patients is herewith published for the information of those most concerned.

2. To date, 22 general hospitals have reported the average length of stay of overseas cases. General Hospital No. 35, West Baden, Ind., returned a report of 16 days, which is the lowest average length of stay of any of the general hospitals reporting. General Hospital No. 7, Roland Park, Md., having 296.31 days as an average, was considered as falling outside of a fair estimate, inasmuch as this hospital treats and teaches the blind and thus falls into a class entirely by itself. Excluding the return of this hospital, the 21 remaining general hospitals show an average length of 32.18 days.

3. The following is a table showing the result of this canvass among the general and base hospitals:

GENERAL HOSPITALS.	Days.
Army and Navy General Hospital, Hot Springs, Ark.	33.00
General Hospital, San Francisco, Calif.	34.60
Walter Reed General Hospital, Takoma Park, D. C.	26.40
General Hospital, No. 2, Fort McHenry, Md.	27.90
General Hospital, No. 4, Fort Porter, N. Y.	48.10
General Hospital, No. 5, Fort Ontario, N. Y.	24.70
General Hospital, No. 6, Fort McPherson, Ga.	24.21
General Hospital, No. 7, Roland Park, Md.	296.31
General Hospital, No. 9, Lakewood, N. J.	44.21
General Hospital, No. 11, Cape May, N. J.	21.80
General Hospital, No. 12, Biltmore, N. C.	31.00
GENERAL HOSPITALS—continued.	Days.
General Hospital, No. 25, Fort Benjamin Harrison, Ind.	27.66
General Hospital, No. 26, Fort Des Moines, Iowa	34.01
General Hospital, No. 27, Fort Douglas, Utah	17.32
General Hospital, No. 28, Fort Sheridan, Ill.	41.00
General Hospital, No. 29, Fort Snelling, Minn.	33.97
General Hospital, No. 30, Plattsburg Barracks, N. Y.	29.98
General Hospital No. 31, Carlisle, Pa.	23.00
General Hospital, No. 32, Chicago, Ill.	46.50
General Hospital, No. 34, East Norfolk, Mass.	32.00
General Hospital, No. 35, West Baden, Ind.	16.00
General Hospital, No. 38, East View, N. Y.	57.40

BASE HOSPITALS.	Days.	BASE HOSPITALS—continued.	Days.
Camp Bowie, Tex	9.16	Camp Meade, Md	10.10
Camp Custer, Mich	17.80	Camp Pike, Ark	12.00
Camp Devens, Mass	4.50	Camp Shelby, Miss	7.75
Camp Dodge, Iowa	29.70	Fort Sill, Okla	23.80
Camp Gordon, Ga	9.45	Camp Upton, Long Island, N. Y	15.91
Camp Jackson, S. C	6.11	Fort Bliss, Tex	18.20
Camp Kearny, Calif	15.79	Fort Riley, Kans	10.80
Camp Lee, Va	10.02	Fort Sam Houston, Tex	47.00
Camp Lewis, Wash	15.75		

4. Eighteen base hospitals reported, with an average of 14.96 days. This figure is necessarily lower than that of the general hospitals, inasmuch as the base hospitals did not receive such a large number of the serious general overseas cases as did the general hospitals. The longest stay reported from the base hospitals was 47 days. The shortest stay reported was received from the base hospital, Camp Devens, Mass., with 4.5 as an average.

5. A comparison of the figures of the April canvass with those of January may be of interest. The general hospital average from the reception of the first overseas cases up to January was 40.96 days while that from January to April was 32.18 days. It is believed that improved methods of observation were responsible for the shorter length of stay of cases in the hospitals. The January canvass shows 11.22 days as an average for base hospitals, while the April report shows 14.96. This is longer by 3.74 days than the first report, and it is believed that the explanation of this increase is due to the fact the base hospitals assumed a gradually increasing proportion of the overseas cases of increasing severity as the general hospitals became filled up, as was intended they should.

6. While it is true that the evacuation of cases from the American Expeditionary Forces is nearly finished, the sick and wounded returning from abroad from now on must all be handled by the general hospitals alone. It is earnestly desired that the good service heretofore given in the past be continued, and there is confidence in this office that the general hospitals will be able to execute this important work with dispatch. If the service progresses rapidly we will be able to close all hospitals receiving overseas cases except the few which may be operated with personnel of the regular service plus the temporary personnel which desires to remain. The regular medical service alone will, no doubt, be sufficient to complete the work.

(*Cir. Letter No. 233, Surgeon General's Office, June 4, 1919.*)

Unidentified Patients.

1. Numerous requests have been made to this office for information relative to unidentified patients in hospitals.

2. In order that this office may be prepared to answer requests of this nature, it is desired that you submit a report to this office at once stating positively whether there are any patients now in your hospital whose identity is uncertain. In case there are any such patients, a photograph and full description of patient will be submitted.

3. Hereafter in the event that any unidentified patient is admitted to your hospital, a full report of the facts of admission, with all circumstances connected therewith, will be submitted to this office.

(*Cir. Letter No. 317, Surgeon General's Office, October 6, 1919.*)

Auditing of Patients' Money and Valuables.

1. Commanding officers of general hospitals and surgeons of military commands will appoint a suitable officer other than the custodian for the purpose of auditing the money and valuables belonging to patients in hospital. This audit will be made at the end of each calendar month.

2. A record of the fact that audit has been made will be shown on the books pertaining to patients' valuables where it will be available for official inspection.

(*Cir. Letter No. 325, Surgeon General's Office, October 14, 1919.*)

Patients' Fund.

1. The following method of accounting for patients' money and valuables has been adopted for all general hospitals:

(*a*) Have a book of receipt blanks with stubs, receipts and stubs to be numbered serially. Give each patient a receipt for money and valuables deposited by him. List same on the corresponding stub and require the patient to sign the stub at the time of deposit.

(*b*) Deposit all money in a local bank to the credit of "Patients' fund." Pay all withdrawals by check against this fund.

(*c*) Keep a debit and credit account of this fund, using an ordinary blank book ruled for the purpose. Debit this account with all money deposited, and credit this account with all withdrawals. Balance this account at least once each week, and when the account is to be audited.

(*d*) Any patient desiring to withdraw money or valuables should be required to present his receipt. Note on the back of this receipt date and amount of withdrawal, and require the patient to sign same. Make a corresponding notation on the stub. In case of the withdrawal of the total amount deposited, take up the receipt and attach same to the stub.

2. The officer detailed to audit the account should ascertain the accountability by examining the receipt stubs. See that none are missing, as shown by the serial numbers; check the cash account and the check book. The fact of audit should be noted on the cash account book, and dated and signed by the auditing officer.

3. If desired, the receipt may be prepared in triplicate by carbon process, the original given to the patient, the duplicate left in the book in lieu of the stub, and triplicate filed alphabetically, thus serving as an index to the patient's account. It is important that the receipts be given serial numbers, to enable the auditing officer to determine that no records of deposit have been lost or destroyed. Care should also be taken that all withdrawals be noted on the duplicate and triplicate copies of the receipt as well as on the original.

4. At the larger hospitals, where there are many deposits, it may be found advisable to maintain a card-index record of each patient's account, with all debits and credits entered thereon.

5. The system as outlined above will be inaugurated at your hospital at the earliest practicable date.

6. This monthly audit of this account will be made as directed by Circular Letter No. 325.

(*Cir. Letter No. 335, Surgeon General's Office, October 27, 1919.*)

Receipt for Patients' Money.

1. It has come to the attention of the Secretary of War that in some instances receipts given for patients' money read "for deposit in hospital safe at owner's risk."

2. No authority exists for giving conditional receipts in any form which undertakes to qualify or evade the responsibility in respect to the money of patients devolved by paragraph 221, Manual for the Medical Department, upon the commanding officer of the hospital. The Secretary directs that the qualifying of receipts by such conditions be discontinued.

(*Cir. Letter No. 344, Surgeon General's Office, November 11, 1919.*)

Recognition of Sections Representing Specialists.

The sudden expansion of the Medical Corps of the Army by the incorporation of civilian physicians forces the consideration of new questions of policy. Civilian physicians of the largest experience are for the most part specialists. The problem is, how to give the Army the benefit of their special training and at the same time give them the necessary military instruction to make them effective from the military standpoint. Apart from the Medical Department, specialism has long been the rule in the other branches of the service. And in the Medical Department by the specializing of certain men, preventive medicine achieved some of its most notable advances.

In the beginning of the war it became the policy of this office to utilize the services of the specialist as far as possible in the line of his specialty. As soon as this became known, the specialists of the country dropped their reluctance to enter the service. The first step in carrying out this policy was the grouping of those specially qualified into a Section of Surgery of the Head. The specialties which form this group are ophthalmology, otolaryngology, brain surgery, and oral plastic surgery of the face.

Other specialties—for instance, orthopedic surgery, psychiatry, venereal and skin diseases, and genitourinary surgery—also have been recognized and treated as sections.

It will be seen that with the advent of recognized sections for the various specialties the older division of Army medical work into the two divisions of surgery and medicine is superseded by the following grouping:

1. Section of Internal Medicine.
2. Section of General Surgery.
3. Section of Orthopedics.
4. Section of Venereal, Skin, and Genitourinary Surgery.

5. Section of Surgery of the Head.
6. Section of Laboratories and Infectious Diseases.
7. Section of Neurology, Psychiatry, and Psychology.
8. Section of Roentgenology.

This grouping accepted, the chiefs of all the sections should have equal rank, since professionally each in his line is the equal of the other.

When the specialist begins his military training by assignment to a training camp, the fact that he is a specialist may be an embarrassment. For instance, should he become an instructor in any military subject, he can not be taken away without interfering with the progress of the military instruction as planned. This being the case, if he is held back from assignment to work in his specialty should he be needed, as has been the case frequently of late, he loses his individuality as a specialist, and the Army loses the benefit of his special skill. Two methods of avoiding this are possible. The first is not to assign a specialist as instructor, so that he can always be available for immediate release. The second, and better, method is not to call any specialist from a training camp until the commanding officer of the camp has been consulted by letter or wire. When the organization of the Medical Corps of the Army has progressed a little farther, this difficulty will in a great measure disappear, since the first assignments call for the most men. Later, but few men will be called for at a time.

Orders have already gone out and are being complied with which call for a monthly list of specialists at the various training camps. This furnishes, however, a record of the specialist only in the beginning of his military career. When he leaves the training camp, unless there is an immediate opening in his specialty to which he can be assigned, he is lost track of. In order to avoid this, it is recommended that when he leaves the training camp, and for the rest of his military employment, he report by letter once a month to the officer in the Surgeon General's Office who is the chief of the department of his specialty.

The medical officers for the Section of Surgery of the Head who have been assigned to the cantonment hospitals have been listed according to their specialty and ordered for duty in it. It is recognized, however, that in the beginning, when all the work is in the rough, there will be but little for them to do. During this period, therefore, they would naturally be asked to join in any medical work that was necessary.

Having placed the specialist at once in his specialty, it is necessary, in order to keep his efficiency at the maximum, that he should not be taken from it except in case of great emergency, and that in actual war conditions he should see his case at the earliest possible moment. Men trained in special work are to be stationed in the evacuation hospital or even nearer the front. The specialist in this way sees his case at the very beginning, and the case in its progress to the rear receives an ever-increasing amount of special care until the hospitals for surgical repair and reeducation have finished with the injured man and returned him to civil life.

In order to serve the interests of the surgeons working in the surgical specialities of the head, an otolaryngologist, an ophthalmologist, a brain surgeon, and an oral plastic surgeon have been assigned to the Surgeon General's Office. As they knew the personnel of their specialties, they act both in an advisory capacity and as an information bureau for the specialists of the country. In order to make sure that the plans formulated in the Surgeon General's Office for the correlation of the specialists of the head carry out in practice, two members of the section have been selected to visit the various cantonments, both National Guard and National Army, to furnish information as to the reasons for subdividing these hospitals into specialities and to see that the personnel selected by this department is in every way qualified to carry out the work assigned.

The personnel of the Section of Surgery of the Head of each cantonment hospital includes one brain surgeon. This assignment is primarily for the purpose of caring for the brain cases occurring in the service of the hospital, and, secondarily, to acquaint the surgeon with the methods of management of a military hospital, preparatory to going abroad.

A general surgeon especially trained in plastic and oral surgery is one of the personnel of the Section of Surgery of the Head. He has associated with him as assistants one dental oral surgeon and, except in evacuation hospitals, also one dentist. Because of the probable small number of brain and plastic and oral cases in the cantonment hospital, the surgeons of these two divisions will assist each other in caring for their respective cases. In the special building for the Section of Surgery of the Head there are special operating rooms. One of these is set aside for the services of otolaryngology. This room is to be shared jointly by the otolaryngologist, the brain surgeon, and the oral plastic surgeon. Whenever the brain surgeon and the oral plastic surgeon need instruments not in the otolaryngological equipment, they are to be obtained from the general surgical equipment.

The surgeon in charge of plastic and oral surgery has charge of injuries and surgical diseases of the mouth and its essential structures, including the bony framework and soft structures of the face, and also of the neck when the major part of the injury is situated above the clavicle.

Exception to this classification is made in injuries and surgical diseases limited to the orbit or its appendages when the attending ophthalmologist elects to do the work himself.

In injuries and diseases of the external nose and external ear and the accessory sinuses when the attending otolaryngologist elects to do all the work himself.

In injuries and surgical diseases of the larynx when the laryngologist elects to do the work himself.

In thyroid diseases and in special cases of injuries of the peripheral nerves and the spinal column.

The commanding officer or the surgeon in charge of the hospital may delegate such other work to the surgeon in charge of oral surgery as the exigencies of the situation may dictate.

In the absence of the oral plastic surgeon, the dental oral surgeon represents the oral surgery division of the Section of Surgery of the Head. The dental oral surgeon is advised to consult the surgeon in charge of the Section of Surgery of the Head in any question that may arise in the apportionment of cases or in the dental oral surgeon's relations to the oral surgical and general hospital work.

In cantonments the dental oral surgeon's main work will be detecting and treating focal infections about the gums and jawbones, of which there will be a great amount. There may not be enough oral surgery to fill all of the dental oral surgeon's time, or the dentist assistant's time, in which case he will do such other work as the surgeon may delegate to him.

(*Cir. Memo. from the Surgeon General, October —, 1917.*)

Hospital Services.

Attention is called to the fact that the memorandum previously issued by the Surgeon General (Recognition of Sections Representing Specialists) and paragraph 290 is amended to provide for three services; namely, surgical, medical, and laboratory, with a chief for each service, and, further, to provide that each of these services shall include the following special sections or as many as may be necessary (500-bed basis):

Surgical service:
    1 chief of service—
        General.
        Chest.
    4 surgeons.
        Abdomen.
        Fractures.
    4 surgeons, head section—
        Brain.
        Eye.
        Ear, nose, and throat.
        Plastic (face and mouth).
    1 surgeon, orthopedic.
    1 surgeon, urology.
    1 roentgenologist.
    2 dentists.
Medical service:
    1 chief of service.
    4 physicians (including 1 neurologist).
    1 or 2 psychiatrists (in camp hospitals in United States).
Laboratory service:
    (Includes pathology, bacteriology, serology, chemistry, morgue, and public-health laboratory work for the command.)
    1 chief of service (to cover pathology, bacteriology, serology).
    1 assistant.
    (All other laboratory workers are under the chief of this service.)

For the head section a section chief may be designated if desired.

The commanding officer will organize a convalescent camp as the conditions warrant.

The nursing service remains as at present, with the provision that the number of nurses may vary according to the needs of the service.

Paragraph 307 is amended to include the laboratory chiefs.

Attention is called to the fact that the provision of the several specialists in the medical and surgical organization is solely for the purpose of providing competent professional attention for the sick and wounded. The individual members of the staff, although assigned to duty with the organization for the purpose of providing special skilled service as the occasion may warrant, are nevertheless to be used as the chiefs of service and the commanding officer may direct. This provision is made in order that the work may be properly covered at all times and in order to accomplish the results expected of good organization and administration.

(*Cir. Memo. from the Surgeon General, November 11, 1917*).

Staff Organization of Hospitals.

1. The following is supplemental to letter of this office dated February 19, 1918, subject Administration, and has special reference to paragraph 4 thereof.

2. Permanent staff of a 500-bed hospital unit should be as follows:

Administrative:		Clinical:	
Commanding officer	1	Surgical service	10
Adjutant	1	Medical service	10
Registrar	1	Laboratory service	2
Quartermaster	1		
Mess officer	1	Total	27

3. Permanent staff of a 1,000-bed hospital unit should be as follows:

Administrative:		Clinical:	
Commanding officer	1	Surgical service	10
Adjutant	1	Medical service	17
Registrar	1	Laboratory service	3
Quartermaster	1		
Mess officer	1	Total	35

4. The staff organizations as outlined above are to be considered as permanent skeletal organizations which may be enlarged by the temporary assignment of additional medical officers, upon request, to the number sufficient to meet the requirements of the individual hospital, based upon the character as well as the number of cases under treatment.

5. From the officers assigned in excess of the totals indicated above it is desired that commanding officers, in consultation with the chiefs of service, will organize a complete supplemental staff that will be available for assignment to base hospitals that are now in process of organization or will be organized in the future.

(*Cir. Letter, Surgeon General's Office, March 7, 1918.*)

Report on Hospital Newspapers.

1. Providing a newspaper is published at your hospital, for and by the enlisted men and patients, it is requested that on the first day of each month a report be rendered this office, covering all funds collected and expenditures incurred by the periodical during the month previous, and the disposition of the surplus, if any.

2. This report should include a summary of advertising and circulation income; also printing, distributing, and incidental expenses.

3. The report should furthermore include remarks on the growth or decline of the publication, with reasons for the same; also any suggestion as to how this office may cooperate with it.

4. The officer in charge of the publication at your hospital should sign this report and send it to this office, attention Col. W. W. Smith, S. C.

5. If practicable, a report should be made as of the date of December 1, 1918.

(*Letter to commanding officers all base and general hospitals, ports of embarkation, Surgeon General's Office, November 30, 1918.*)

Questionnaire on Hospital Publications.

1. By circular of November 30, 1918, subject, Report on Hospital Newspapers, a monthly report is required covering the operation of each hospital publication.

2. A comprehensive survey of the publications individually and collectively being necessary at this time, you will please see that, in addition to the usual monthly report, the accompanying questionnaire is properly filled out as soon as possible after April 1, 1919, and returned to the Section of General Publicity, this office, to reach here not later than April 15, 1919.

3. Failure to promptly comply with the above instructions may result in the suspension of the publication at your post.

4. Statements from the chief educational officer, the chaplain, and the morale officer as to the value of the publication to the patients and personnel, and possibly the public, will be appreciated.

5. No publication should be established without permission from the Surgeon General.

QUESTIONNAIRE ON HOSPITAL NEWSPAPERS AND MAGAZINES.

[When filled out, this questionnaire should be returned to the Surgeon General, United States Army, Washington, D. C., marked "Attention, Section of General Publicity."]

1. Number and location of hospital? Answer..........
....
2. Is a periodical, newspaper, or magazine issued at said hospital? Answer..........
....

(If the answer is "No" the remaining questions need not be answered, but the commanding officer should sign and return this questionnaire.)

3. What is the name of the publication? Answer..........
4. When was it established? Answer..........
5. Is it a newspaper or magazine? Answer..........
6. What is the size of page and average number of pages? Answer..........
7. How frequently is it published? Answer..........
8. Does it carry advertisements? Answer..........
9. What are the rates for advertising? Answer..........
10. How are advertisements solicited:
    By soldiers? Answer..........
    By civilians? Answer..........
11. What commission is paid:
    To soldiers? Answer..........
    To civilians? Answer..........
12. Is it sold, and if so, at what price:
    To patients? Answer..........
    To personnel? Answer..........
    To general public? Answer..........
13. What is the subscription price? Answer..........
14. What is the circulation:
    (*a*) Free? Answer { Patients..........
    Public..........
    (*b*) Sales? Answer { Patients..........
    Public..........
    (*c*) Subscriptions? Answer..........
15. How sold (answer fully):
    By soldiers? Answer..........
    Through organizations? Answer..........
16. What commission is paid, if any? Answer..........
17. Is extra-duty pay allowed to soldiers connected with the publication? Answer..........
....
18. Is the publication entered at the post office as second-class matter? Answer..........
19. How was the publication first financed? Answer..........
20. If not financed through subscriptions and advertising, how is the expense of publication met? Answer..........
21. Has it been profitable? Answer..........
22. What disposition has been and will be made of the profits? Answer..........
....
23. What has been the total income to date from—
    (*a*) Advertising? Answer..........
    (*b*) Circulation? Answer..........
    (*c*) Other sources? Answer..........
24. What is the total expense of publication to date:
    (*a*) Printing? Answer..........
    (*b*) Illustrations? Answer..........
    (*c*) Commissions on advertising? Answer..........
    (*d*) Expense of selling? Answer..........

25. What is the average cost per issue? Answer..........
26. What is the average net profit? Answer..........
27. What is the financial situation—i. e.:
  Assets—
    (*a*) Cash on hand.......... ....
    (*b*) Due from advertisers.......... ....
    (*c*) Due from others.......... ....
      Total.......... ....
  Liabilities—
    (*d*) Printing bills.......... ....
    (*e*) Other bills.......... ....
      Total.......... ....
  Profit.......... ....
  Loss.......... ....
28. How is the publication received:
  (*a*) By the patients? Answer..........
  (*b*) By the personnel? Answer..........
  (*c*) By the public? Answer..........
29. Any remarks..........
....
30. A copy of the publication should accompany this report.

(Signed) ....

....
Official connection with publication.

(*Cir. Letter No. 142, Surgeon General's Office, March 19, 1919.*)

Sale of Hospital Newspapers.

1. It is directed that you take measures that will at once effect the discontinuance of the sale of hospital newspapers by patients or enlisted men of the Medical Department on duty at your hospital. Many criticisms of this method of selling hospital newspapers have reached this office and it is believed to be to the best interest of the service to have the practice discontinued as soon as possible.

(*Cir. Letter No. 171, Surgeon General's Office, April 10, 1919.*)

Hospital Newspapers.

1. You will be gratified to know that the American Red Cross Headquarters, Washington, D. C., has placed that organization squarely behind the hospital publications, and a letter will shortly be sent to the local chapters in cities where Army hospitals publishing newspapers are located. The local chapters will be requested to cooperate with the commanding officer of the hospital and the editors of the hospital newspapers in every possible way, especially toward the securing of subscribers, the sale of the newspapers on the streets, in department stores, theaters, etc., and upon the news stands.

2. The Red Cross will also invite the cooperation of similar organizations functioning under the direction of the Red Cross in the Army hospitals, such as the Junior Red Cross, the Y. M. C. A., K. of C., etc. It is suggested that you, or the editor of your publication, get in touch with the local chapter on this matter, and at an early date.

3. It has been suggested that a very feasible way of increasing the circulation of the hospital newspapers would be to have a week set aside during which there should be a "subscription drive," under the direction of the local Red Cross chapter, for six months' subscription, at $1 each. It is believed that if the life of the publication should be longer than six months, there will be no great difficulty in securing renewals of such subscriptions, and if the publication suspends we are prepared to fill such subscriptions with one of the other hospital publications which will live.

4. The Department of the Military Relief, Headquarters American Red Cross, Washington, D. C., is handling the matter in cooperation with the Morale Branch of the General Staff and the Section of General Publicity of the Surgeon General's Office.

5. The above does not apply, of course, in cases where the hospital newspaper is not sold, except that it is desired that everywhere there should be the closest and most cordial relations between the hospital publications and the local chapters of the American Red Cross.

NOTE.—This is a letter from the general manager of the Red Cross in Washington to all chapters directing cooperation with hospital papers at the nearest hospital. It is suggested that it be published in all hospital papers to acquaint the public with the Red Cross attitude toward the papers.

To: All division managers. APRIL 24, 1919.
From: General manager.

As an aid in maintaining the morale of the wounded men in the military hospitals, the Surgeon General's Office has authorized the publishing of hospital newspapers. These newspapers contain many interesting comments on the news of the world as it affects the soldiers and, very often, picturesque stories of exploits in which patients of the hospitals have taken part. Purely on their merit as newspapers and quite aside from the peculiar appeal they should have to the people of the country, these papers are well worth the price charged for them.

Until recently these papers were sold largely through the efforts of wounded men and enlisted men of the Medical Corps. Because of the abuses of the uniform in certain localities, The Adjutant General's Office has ruled that such papers can no longer be sold by men in uniform. This has made the sale of the papers very difficult and possibly may make necessary the discontinuing of many of them.

Confronted with this condition, the Surgeon General's Office, with the approval of the Morale Branch of the General Staff, has appealed to national headquarters to enlist the cooperation of Red Cross chapters in stimulating the sale of these papers. The Red Cross has always maintained a very special relationship to the wounded soldier and we feel sure that in this instance our chapters will be very glad to aid. In view of the many demands which have been made on our people, however, we hestitate to make a direct appeal to chapters to undertake this work as a Red Cross job.

It has occurred to us that the best way to handle this would be to present the facts of the case to the chapter officials in whose territory a military hospital is located, stressing the deep interest of the Red Cross in the welfare of the wounded men and suggesting that they take up this question with the hospital commandant. We hope that in this manner arrangements may be made which will materially help in the sale of the papers.

(*Cir. Letter No. 176, Surgeon General's Office, April 16, 1919.*)

Sale of the Come Back and Army Supplement.

1. It is desired to extend the circulation of the Come Back, published at Walter Reed Hospital, together with the Army Supplement, which will be issued monthly in connection with the Come Back, in every possible way, as a recruiting and morale proposition.

2. It is hoped that your post exchange can handle a limited number of copies, placing the same on sale at 5 cents each, or, if necessary, distributing the same free. Also, that it can arrange to take subscriptions for the Come Back, perhaps in connection with your own hospital publication. The subscription price of the Come Back and Army Magazine Supplement is $2 per annum, and each new subscriber has the privilege of nominating an enlisted man, now or formerly in the service, to receive the Come Back one year free through the compliments of the subscriber. On such combination subscriptions the Come Back will allow the post exchange 25 cents. On straight subscriptions—that is, where the subscriber pays $2 and only one copy of the Come Back is desired, with, of course, the magazine supplement—it will allow 50 cents per subscription.

3. We will be glad to be advised at an early date of what, if anything, can be done along this line, and in any event it is hoped that a few copies of the Come Back will be handled so that we will be in a position to say to those interested that the Come Back is on sale in all post exchanges of Army hospitals.

4. The Section of General Publicity, this office, is in charge of these arrangements.

(*Cir. Letter No. 228, Surgeon General's Office, May 29, 1919.*)

Sending Copies Hospital Newspapers to Library of Congress.

1. Your attention is invited to Circular No. 326, W. D., June 30, 1819, in regard to the preservation in the National Library of copies of camp or trench papers. In compliance with this circular, it is directed that commanding officers of hospitals publishing newspapers have one copy of the publication sent to the Congressional Library, Washington, D. C. Any expense in this connection will be met by the library.

(*Cir. Letter No. 252, Surgeon General's Office, July 3, 1919.*)

Mailing of Hospital Publications.

1. As the end of the period of demobilization approaches, it is considered desirable that the use of penalty envelopes for mailing copies to relatives of soldier-patients be discontinued in the case of our publications enjoying second-class mailing privileges. Hereafter such copies should be mailed under the same conditions as subscriber's copies are mailed.

(*Cir. Letter No. 260, Surgeon General's Office, July 17, 1919.*)

Supplying Copies to Joint Committee on Printing.

1. In accordance with paragraph 5 of the letter from the Congressional Joint Committee on Printing under date of April 15, 1919, to the Secretary of War, and published in a War Department circular dated April 26, 1919, you will take steps to insure that a copy of your publication is sent regularly as soon as issued by you to the Joint Committee on Printing, Capitol, Washington, D. C. If possible to send a file of back numbers beginning with April 15, or approximate date, such file should be sent to the same address.

2. The care exercised by those in charge of the several publications that no objectionable matter should appear therein is appreciated, and little, if any, criticism has been heard. It is well to bear in mind, however, that the purpose of the hospital publications is to entertain and instruct the patients and personnel, and cooperate in sustaining the morale and upbuilding of the Army through the stimulation of recruiting, etc. They are not charged with the duty of settling disputed questions, such as the League of Nations or prohibition.

3. Acknowledgment of the receipt of this communication is requested, addressed attention Maj. W. W. Smith, Surgeon General's Office.

(*Cir. Letter No. 265, Surgeon General's Office, July 18, 1919.*)

Hospital Newspaper.

1. Instances have come under observation where parties outside the service have attempted to use our hospital publications for their own purposes by submitting matter for publication. In one instance a particularly peculiarly offensive article was published, necessitating disciplining of the party responsible for its publication.

2. You will, therefore, closely scrutinize all matter originating outside the hospital, as well as inside, and in case of doubt omit same from publication.

3. It is desired that no matter emanating from Washington be published except that sent from the Office of the Surgeon General.

(*Cir. Letter No. 270, Surgeon General's Office, July 29, 1919.*)

Reduced Capacity of Hospitals.

1. The commanding officers of the base hospitals in the following camps have been advised that hereafter the capacity will be listed as appears in the following table:

	Present capacity.	Number of patients.	New capacity.	Reduction.	Number of troops per month.
Fort Oglethorpe	1,463	748	1,000	463	8,400
Camp Dodge	1,600	1,327	1,000	....	30,000
Camp Grant	1,500	1,286	1,000	....	24,000
Camp Jackson	1,700	745	1,000	700	4,300
Camp Lee	2,009	1,214	1,500	509	10,000
Camp Lewis	1,773	926	1,200	573	5,000
Camp Meade	1,862	1,132	1,500	362	7 000
Camp Pike	1,500	937	1,100	400	....
Camp Shelby	1,216	276	500	716	6,200
Camp Sheridan	1,310	218	500	810	....
Camp Sherman	1,583	1,451	500	....	22,000
Fort Sill	826	379	500	326	....
Camp Taylor	1,900	1,818	500	....	6,000
Camp Travis	1,774	1,045	1,500	274	5,000
Camp Upton	1,282	1,213	1,500	....	....
Camp Wadsworth	1,634	337	1,000	634	....
Camp Custer	1,731	737	1,000	731	9,000
Camp Bowie	1,486	648	1,000	486	5,000

2. They have been instructed to reduce the personnel accordingly.

(*Memo., Surgeon General's Office, March 1, 1919.*)

Hospitals, Reduction in Bed Capacity.

1. In the future the bed capacity of the following base hospitals will be carried as given below and the commanding officers have been instructed that they should reduce their personnel accordingly:

Camp Gordon, Ga	1, 200
Camp Lewis, Wash	1, 000
Camp Meade, Md	1, 300
Fort Riley, Kans	1, 500

(*Memo., Surgeon General's Office, March 27, 1919.*)

Hospital Capacity, Reduction.

1. This date the hospitals enumerated below were requested to reduce their organization and capacity to the number indicated opposite each hospital:

Camp Bowie	750	Camp Lewis	750
Camp Devens	1, 200	Camp Meade	1, 200
Camp Dix	1, 200	Camp Pike	750
Camp Dodge	1, 000	Camp Taylor	1, 500
Camp Gordon	500	Fort Riley	1, 200
Camp Grant	1, 200	Fort Sam Houston	1, 200
Camp Lee	1, 000		

(*Memo., Surgeon General's Office, May 1, 1919.*)

Overseas Patients and the Future Function of Camp Base Hospitals.

1. It has been determined that no more overseas cases will be sent to your hospital for treatment, and that your hospital will hereafter function as a "camp hospital."

2. With a view to a reduction of your bed capacity, you will submit to this office a census of your present patient population. The classification to be employed in taking the census is as follows:

(*a*) Arthritis, chronic (nontraumatic).
(*b*) Epileptics and mental defectives.
(*c*) Eye, ear, nose, and throat, wounds and injuries or diseases requiring surgical treatment of importance.
(*d*) Medical cases, general, including—
  (1) Cardiovascular.
  (2) Organic cardiac.
  (3) Functional cardiac.
  (4) Gassed cases.
  (5) Nephritis, chronic.
  (6) Diabetes.
  (7) Gastrointestinal diseases.
(*e*) Nervous system, organic diseases of.
(*f*) Neuroses, functional.
(*g*) Orthopedic cases, including—
  (1) Deformities of extremities due to or associated with contractures of muscles, ligaments, and tendons.
  (2) Derangements and disabilities of joints including articular fractures.
  (3) Deformities and disabilities of the feet.
  (4) Cases requiring tendon transplantation.
(*h*) Peripheral nerve injuries and paralyses, including healed or unhealed wounds, with or without fracture.
(*i*) Surgical cases, general—
  (1) Unhealed wounds of soft parts in general.
  (2) All fractures of upper extremities.
  (3) All osteomyelitis and all bone sinuses.
  (4) Thoracic, abdominal, and genitourinary injuries, (including empyema).
  (5) Injuries and tumors of blood vessels.

(*i*) Surgical cases, general—Continued.

(6) Amputations, fingers and toes.

(7) Fractures of the lower extremities, including unhealed or healed wounds, nonunion, delayed union, or malunion.

(*j*) Tuberculosis, pulmonary.

(*k*) Wounds or injuries of the skull or brain.

(*l*) Wounds or injuries of the spinal cord.

(*m*) All other cases not classified above.

3. You will include in this report a recommendation as to the disposal of those patients who will require one or more months of treatment after July 1, and the estimated number of same in each of the classes shown above. Home State of soldiers recommended for transfer will be shown.

4. You will also submit to this office recommendations covering the reduction in the personnel to conform with the information covered in paragraph 1, with approximate dates on which reductions can be made. As officers become surplus, they will be reported by name in two classes—first, those whose immediate discharge is desired and recommended; second, those willing to remain in service temporarily or permanently.

5. This report will be submitted in duplicate through the camp surgeon at the earliest possible date, attention Hospital Division.

(*Cir. Letter No. 231, Surgeon General's Office, June 2, 1919.*)

Regulations, Base Hospitals.

1. Regulations for base hospitals at cantonments have been submitted. Recommendations covering the following points are that sick and wounded report shall be forwarded to the Surgeon General's Office direct; that the hospital fund statement shall be approved by the commanding officer of the base hospital; that the sanitary report be not rendered by the base hospital; that discharge on S. C. D. will be recommended by the commanding officer of the base hospital to the division commander, whose action will be final.

2. Muster of patients in hospital will be accomplished as is prescribed in paragraph 2, G. O. 49, 1917. Patients marked "hospital" at sick call will be carried in hospital as "present sick," and taken up as from "command." They will be so carried until discharge or transfer is contemplated, when service record will be called for, after which they will be carried "absent sick." Patients sick in regimental infirmaries will be carried as "in hospital."

3. Form 84, edition of June 15, 1917, will be sent to the division surgeon with such other reports regarding the sick as the division surgeon may require. Commissioned and enlisted personnel of base hospitals will be assigned by War Department orders and will not be subject to change except by the same authority.

(*Cir. Letter from the Surgeon General, October 5, 1917.*)

Base Hospitals, National Army and National Guard.

1. Base hospitals at National Army and National Guard camps will be under the control of the division commander. These hospitals, being permanent base hospitals, do not form part of tactical divisions. They are well-equipped institutions with large staffs of selected medical officers, and are intended for the treatment of the sick of the camp who should be retained under ordinary conditions and not evacuated to other hospitals. The base hospitals will also perform such public-health laboratory work as may be necessary to safeguard the health of the division. Regulations governing their internal administration are those prescribed for general hospitals in the Manual of the Medical Department.

2. Muster of patients in hospital will be accomplished as is prescribed in paragraph 2, G. O. 49, 1917.

3. The following regulations will govern the disposition of sick at divisional cantonments:

(*a*) Patients marked "hospital" at sick call will be sent to the base hospital, accompanied by a nominal list showing name, rank, and organization, with a tentative diagnosis, and whether or not in line of duty. The regimental surgeon will report these cases as "in hospital" on company sick books, and upon the surgeon's morning reports of sick and wounded. He will continue to carry them in this manner until return to duty. When a patient is to be transferred out of the division, the commanding officer, base hospital, will call for the service record.

(*b*) Patients carried in quarters will be reported on Form 52 by the regimental surgeon. Patients sick in regimental infirmaries will be carried as "in hospital" by the regimental surgeon. Should any patient sick in quarters or regimental infirmary be sent subsequently to the base hospital, he will be accompanied by a transfer card (par. 215, M. M. D.).

(*c*) Patients transferred from a base hospital to quarters will be accompanied by a transfer card (par. 215, M. M. D.) and will be taken up on the regimental sick report. The commanding officer, base hospital, will furnish the regimental surgeon and company commander each day with a list of the men of the regiment who have been transferred or returned to duty, in order that the proper entries may be made on the company sick books.

4. Form 84 (edition of June 15, 1917) will be sent to the division surgeon with such other reports regarding the sick as the division surgeon may require. The report of sick and wounded with the report of dental work will be sent to the Surgeon General's Office direct.

5. The sanitary report will not be rendered.

6. The hospital fund statement will be approved by the commanding officer of the base hospital.

7. Routine issues of medical supplies to divisional units and of veterinary supplies to divisional units and remount depot at the camp will be made on requisition to the medical supply officer on approval of the division surgeon. All Medical Department property issues will be made from the medical supply depot located at the base hospital. Replenishment of stock for the base hospital supply depot will be obtained from the departmental supply depot on requisitions forwarded through the department surgeon. Requisitions for articles not on the supply table will be forwarded to the Surgeon General for approval.

8. Commissioned and enlisted personnel of base hospitals will be assigned by War Department orders, and will not be subject to change except by the same authority.

(*Cir. Letter from The Adjutant General of the Army to commanding generals of all National Army and National Guard Divisions, October 22, 1917.*)

Hospital Regulations.

1. The following features of hospital administration have been the subject of frequent complaint, and the Surgeon General directs that special attention be paid to them:

(*a*) *Notifications of relatives of patients seriously ill in hospital.*—You are directed to hold chiefs of services responsible for prompt notification of all cases in hospital of a serious nature (to include major operations). Definite statement should be made if the prognosis includes fatal termination. These reports will be sent to an officer designated to receive them, who will, in turn, notify the nearest relatives by mail of the facts as reported, or by wire, if necessary. A file of notices received from the wards, with action taken in each case, will be kept in the office for the protection of the hospital. Such additional notification regarding progress of the case as is required will be sent. If assignment of an additional officer is necessary in order that this work may be carried out you are directed to notify the Surgeon General's Office of the fact, attention Colonel Glennan, when an officer will be detailed.

(*b*) *Care of patients.*—You are directed to supervise and control the attitude of medical officers, nurses, and enlisted men in their care of patients under treatment in your hospital, with a view to preventing the attitude of "apparent indifference" or routine which sometimes appears where routine methods are required under the great pressure of work to which personnel of all base hospitals has been subjected.

(*c*) *Care of the dead.*—Provisions of Army Regulations, as laid down in paragraphs 87, 162½, 167, and 824, will be strictly complied with. Your attention is called to the last sentence of paragraph 87, which reads as follows: "The responsibility of the surgeon for the proper care and preparation of the remains will not cease until they are removed by the quartermaster for interment or shipment."

(1) Such precautions as the attaching of tag showing name, rank, organization, or other data regarding the deceased, as may be deemed necessary while patient is yet in the ward, where such information may be obtained in an accurate manner.

(2) Inspection of all bodies by a designated officer, such as registrar or quartermaster, to see that embalming, clothing, and other items of preparation have been properly attended to.

(3) Collection for filing of receipt from the undertaker or embalmer, showing name of deceased, whether or not post-mortem examination was made; whether or not the vessels of the head and neck were properly injected; that body was properly clothed in uniform; address to which body was to be shipped or delivered; and any other item deemed necessary for the protection of the hospital and for the proper care and delivery of remains to the designated relative or other person.

(*d*) *Attention to inquiries by relatives.*—All letters inquiring about the sick under treatment will be answered promptly and fully in so far as the provisions of Army Regulations permit, with such information as will show an accurate knowledge and proper interest in the cases inquired about. This work may be done by the officer referred to, who is to perform the work of notifying relatives in cases of serious illness.

(*e*) *Care of patients' effects.*—You are directed to enforce in a rigid manner the provisions of regulations regarding care of patients' effects, and to use disciplinary measures if necessary in order that these provisions may be carried out exactly.

(*Cir. Letter from the Snrgeon General, January 28, 1918.*)

Hospital Regulations.

1. It is desired that five copies of your hospital regulations, if such regulations have been published, be submitted to this office, attention Hospital Division.

(*Cir. Letter No. 219, Surgeon General's Office, May 22, 1919.*)

Regulations, Army School of Nursing.

1. The resignations of student nurses on probation may be accepted by the director of the training school unit with the approval of the commanding officer, and official notification will be forwarded to this office.

2. In accordance with the provision which appears in the announcement of the Army School of Nursing, upon the satisfactory completion of the probationary period the director of the training school unit shall recommend to the dean of the Army School of Nursing the acceptance of the student, and upon the approval of this recommendation the student will be considered a regularly accepted member of the Army School of Nursing.

3. In the case of a dismissal the director of the training school unit shall recommend such dismissal for approval, which recommendation shall be forwarded through the commanding officer to the dean of the Army School of Nursing, to be ratified by the Surgeon General.

(*Cir. Letter from the Surgeon General, November 29, 1918.*)

Report of Inspection of a Base Hospital.

1. Inclosed is a copy of a report of the inspection of a base hospital by the chief inspecting nurse of the Army.

2. Inasmuch as many pertinent criticisms are made of conditions found and many excellent suggestions put forward, this report is circulated for the information of all commanding officers of base and general hospitals in order that conditions of an undesirable nature, such as are mentioned in this report, may be corrected, and that wherever useful suggestions are made they may be taken advantage of by all concerned.

From: The chief inspecting nurse.
To: The Surgeon General.
Subject: Inspection of base hospital.

The classification previously used in the report of base hospitals which compares the care of the sick in the base hospitals with the care given in civil hospitals is used in making this report:

Grade A, excellent: B, good; C, fair; D, poor; E, very poor.

Ratio of nurses to patients (1–9 grade C).—On the day of the inspection number of patients was 884, the total number of nurses 95, making a ratio of 1 nurse to 9 patients. This ratio of nurses provides good nursing care for the acutely sick patient. It still leaves, however, nine wards without any nurse in the daytime and only seven that have the full time of a nurse at night.

The provision that all acute medical and surgical cases shall be transferred to certain wards brings to these cases the best nursing care with the smallest number of nurses. We are nevertheless of the opinion that complications, relapses, and reinfections would be lessened and better methods and order be maintained by a ratio of nurses to patients that more nearly approaches the ratio found in civil hospitals of grades A and B. This number would, however, be wasted until the present confusion as to the duties and power of a head nurse and her assistants is definitely determined. Whether through observations, direct questions, or casual conversation, the reasons are sought for the prevailing lack of standardization of ward procedures and the failure to maintain methods generally accepted as good, the almost invariable conclusion is that it is due to the constant misunderstanding concerning the administrative powers of the nursing staff.

It was stated by the chief nurse that she transferred a nurse from a surgical ward because, as she was not permitted by the ward surgeon to assist at dressings and her work was almost exclusively limited to the making of beds, it did not seem advisable to permit her to remain.

Let a ward be standardized and the responsibility of the head nurse established, a new ward surgeon with different methods and another attitude toward the ward master and Hospital Corps men, also possibly new, is put in charge, and the established system is immediately broken down This leads to apathy and indifference on the part of even capable and well-trained nurses. In order to proceed with the least possible friction, they wash their hands of responsibility which the welfare of the patients demands should be theirs.

Recommendations.—It is again recommended that immediate measures be taken to establish the rank of the nurse and that the abolishment of the ward master be considered. The suggestion that the latter step might be advisable was made by the commanding officer.

That the plans for nurses' quarters provide for an eventual ratio of 1 to 7 in order that all wards be supervised by nurses and that the number of patients under one nurse shall not exceed 50.

Bedside care (*grade C*).—As in other base hospitals, the beds were almost uniformly clean. The bedside care given the acutely sick in this hospital compares very favorably with the care in any civil or military hospital. The provision of a number of Gatch springs adds materially to the comfort of the acute surgical cases, especially the empyemas. These cases visited in the early morning were receiving excellent care from the standpoint of bathing and the care of the mouth and back. As these cases are particularly prone to bedsores, the backs of several were examined and were in good condition. In wards where there was less serious illness, as in other base hospitals, the impression received was that patients that would not be allowed out of bed in civil hospitals were permitted to get up, and to their detriment, here.

Certain features of the care of these patients is open to criticism. The empyema cases were using the enamel sputum cups, although the profuseness and nature of the sputa would seem to demand the destructible cup. Enamel cups were also found in the measles and other wards, although there seemed to be found a plentiful supply of the paper cups.

Surgical dressings.—In one ward rubber gloves were being used; in another they were said to be unobtainable. No dressing towels were available, so drains covered with foul pus found their way across the gray blankets, in one instance to the enamel foot tub used earlier for bathing the patients and in another an enamel container intended for sterile instruments. Solutions that would evidently be needed were not at hand. Instruments after use were laid, not in a container for the purpose, but directly on the dressing carriage.

Thermometers.—Only in a few instances were the thermometers properly immersed in a disinfecting solution.

Isolation wards.—In the section used for scarlet fever, the nurses wore gowns, caps, and mouth masks. They sleep and have their meals in the nurses' quarters. The ward master and Hospital Corps men wear white suits and eat and sleep in the ward section. The ward surgeon does not wear a gown, cap, or mask; he resides and has his meals in the officers' quarters.

Recommendations.—It is recommended that the chief nurse be authorized to appoint two supervisors, one for the medical and one for the surgical section, who shall be responsible to her for the standardization of ward equipment and methods. The surgical supervisor shall not be expected to assist with the dressings, but to see that nursing assistance is given either by the head nurse or her staff and that proper apparatus, or that the best possible substitute for proper apparatus, is provided. For example, if paper bags for the waste dressings or a container set aside for this purpose can not be procured, that the utensil used be lined with newspaper, an article easily obtained, easily destroyed, and that protects the utensil from infectious dressings.

That these supervisors in conference with the chief nurse, the ward surgeons, and head nurses decide on methods that shall be common to all wards, and that, despite a changing personnel, remain in effect.

That dimity spreads or a sufficient number of sheets be provided for use as spreads and that in no wards shall blankets be unprotected during the day or night.

That a container that will completely immerse the thermometer be provided. As a measure to insure the proper use and cleanliness of this instrument, the following equipment will be found in our best hospitals:

White enamel tray (12 by 9).
1 glass tray covered with gauze compress (filled one-fourth full with bichloride 1-2500).
Rectal thermometers in tray.
1 glass tray with mouth thermometers, kept in alcohol, 95 per cent.
1 glass tray with tube vaseline.
1 bottle with alcohol, 70 per cent.
1 kidney basin.
Cotton (abs.) in glass dish.

That all wards be wired not only for the separation of the patients to avoid infection, but to enable their being screened for baths, dressing, and other purposes.

That the ward master and Hospital Corps men be permitted to reside in their regular quarters and go to the mess hall instead of using the isolation ward. These are the only wards in the hospital where the ward master is given a room on the ward.

Diets—

Service of—		Quality and selection.	
Mess.	Ward.	Light.	Reg.
D	D	D	D

From the standpoint of quality, the food which compares favorably with the regular diet in civil hospitals compares very unfavorably with the mess served in the nurses' quarters, which, judging from the statements of the nurses and the meals served during the inspection, is excellent. Since the same sum is appropriated for the patients' mess that is appropriated for the nurses, it would seem that this difference should not be permitted to exist.

In this hospital the food is not served by the cafeteria method but is placed in containers on the table. The same defects in this method were noted here as elsewhere, namely, that this form of service requires a larger number of people to serve the food. It is likely to get cold before the men are seated, and here again, as no utensils were provided for the serving of the various dishes, the patients helped themselves with their own spoon or fork. One patient was observed to put his fork, which had already been used, in several pieces of meat before finally making a selection.

(*Cir. Letter from the Surgeon General, April 15, 1918.*)

Hospital Administration, Modification Requirements.

1. With the development of base hospitals located at National Army cantonments and National Guard camps, it becomes apparent that certain modifications will have to be made in methods of administration; in some instances by changing the methods now in force and in others by addition to the present provision.

2. Many changes in the professional personnel have been required, due to the fact that it was impossible to correctly grade the large number of men suddenly brought into service. Other changes have been made necessary where officers previously exempted for service in the Red Cross and evacuation hospitals were required for service with their organizations ordered abroad.

3. The Surgeon General's Office appreciates the difficulty of proper administration as a result of these changes, and it is believed that from this time on the number of changes in personnel can be reduced to the minimum required for efficient administration of cantonment hospitals. An office order has been issued which directs that orders for officers at base and general hospitals shall be asked for only in cases of urgent need and after the commanding officer of the hospital concerned has been notified of orders contemplated, so that he may signify his consent or objection.

4. The Surgeon General directs that you report, after consultation with the chiefs of service, men whom you consider suitable for the formation of a permanent staff, consisting of chiefs and assistants of the surgical, medical, and laboratory services and the necessary executive officers. Such men as have been exempted for service with Red Cross and evacuation hospitals should be omitted from the staff. Due regard should be had for character of service contemplated in fixed or permanent base hospitals in selection of these staffs. Tables of Organization for base and general hospitals will govern in so far as the permanent staff is concerned.

5. The chiefs of the medical and surgical service are considered as the consulting and administrative officers of their respective services and are not ward surgeons. They will make frequent inspection of all wards under their control in order that they may be certain that their subordinates are performing their duties in a proper manner.

6. The permanent staff will be supplemented by officers assigned for temporary duty upon request of the commanding officer.

7. In addition to the temporary assignments spoken of above, this office will assign from time to time two classes of officers for temporary duty—first officers assigned for observation and training; second, substandard officers or those below par professionally, who will be sent for professional instruction. Should it be determined at any time that officers of the permanent or temporary staff are unsatisfactory or unsuited for the work required, the commanding officer will make such recommendations to this office regarding disposition of the officer or officers found unsatisfactory as he may deem necessary.

8. Substandard officers will be instructed and closely observed and reported upon from time to time regarding their professional qualifications by the commanding officer after consultation with the chiefs of service. As it is desired to maintain the highest standard of efficiency in all hospitals, commanding officers will be held responsible for retaining officers on duty who are unsuited for hospital service. In so far as is possible, commanding officers will be notified of special qualifications possessed by officers assigned for duty, and it is expected that, in general, such officers will be competent to perform the work of their accredited specialty. However, it is intended that such officers shall perform any duty required of them by the commanding officer.

9. The Surgeon General directs the commanding officer of each hospital to appoint an assistant whose duty it shall be to make frequent inspections of patients in all wards of the hospital. He will report to the commanding officer the condition of the wards, bed linen, pajamas, and daily

toilet of all patients in order that the frequent complaints concerning the unsatisfactory condition of bedding and toilet of patients may be eliminated.

10. The department will assign nurses from time to time who are members of base hospitals organized for overseas service. These nurses will be ordered for temporary duty and may be withdrawn at any time. Such nurses should not be assigned to the care of patients with contagious or infectious diseases.

11. It is the desire of the Surgeon General's Office to assign nurses to a hospital in the ratio of 1 nurse to 10 beds. Commanding officers of hospitals will submit proper and timely requisitions for the necessary number of nurses, to be submitted sufficiently in advance to enable him to secure the number needed.

12. The dietition will work under the immediate supervision of the mess officer. She may live with the nurses. The chief nurse will arrange for her hours off duty and supply a substitute. The chief nurse will report to the Surgeon General's Office through the commanding officer regarding the efficiency, conduct, and physical fitness of dietitians on duty.

13. It is directed that the commanding officer exercise every precaution in order that the provisions of letter of January 28, 1918, shall be carefully carried out (this letter deals with the points of notifications of relatives of patients seriously ill in hospitals; care of patients; care of the dead; attention to inquiries by relatives; and care of patients' effects).

14. It has been reported that in many hospitals treating over a thousand patients commanding officers have been forced to give a great deal of their attention to the minor details of administration. It is suggested that such administrative officers as an assistant to the commanding officer and an assistant to the adjutant be detailed if necessary to relieve the commanding officer of all routine work in order that his attention may be given to the larger affairs concerning the well-being of the hospital from the standpoint of efficient administration.

15. It is directed that such clinics, lectures, and courses of instruction as are necessary in addition to those prescribed for substandard officers in letter of December 14, 1917, will be held in accordance with outline furnished November 1, 1917.

16. The commanding officer will make a written report every two weeks to the Surgeon General, attention Hospital Division, upon all requests or authorizations for construction on which action has been delayed, to the detriment of the service. In order that this report may be made in a comprehensive manner, an efficiency board will be formed in each hospital, consisting of the commanding officer and the chiefs of the surgical, medical, and laboratory services. This board will meet twice a month or at the call of the commanding officer, and will submit a stenographic report of the matters considered and action taken at each meeting. Members of this board are expected to make such recommendations regarding policy, equipment, accommodations, and general administration as may appear to be for the good of the service. This report will be forwarded to the Surgeon General, attention Hospital Division, by the commanding officer, by indorsement, expressing his approval or disapproval, with such detailed statements as he may see fit.

(*Cir. Letter from the Surgeon General, February 19, 1918.*)

Laundering Patients' Clothing.

1. The attention of this office has been called to the fact that paragraph 267, Manual for the Medical Department, which provides for the laundering of soiled clothing of patients, is not fully complied with.

2. The following is an extract from a report of a recent sanitary inspection:

> I deem it advisable that a memorandum be issued to all hospitals calling attention to the provision of paragraph 267, Medical Department Manual, which authorizes the laundering at hospital expense of soiled clothing of patients. It is a general practice in most of our hospitals to put away in storage the underclothing of patients admitted, some of which is much soiled.

3. All soiled washable clothing of patients will hereafter be included in the hospital laundry.

(*Cir. Letter from the Surgeon General, March 15, 1918.*)

Mail for Surgeon General, Instructions Concerning.

1. Attention is invited to the condition in which mail is being received in this office—envelopes being unsealed, indicating a failure on the part of some one to seal at point of mailing, and due, in some instances, to too many communications being placed under one cover, resulting in the envelope splitting on the edges and becoming unsealed.

2. In several instances important communications have been received in this office carrying nothing other than a slip of paper to indicate their destinations, not being inclosed in envelopes or other appropriate container.

3. Too much emphasis can not be placed on the care which should be exercised by all concerned in transmitting communications through the mail. They should be inclosed in envelopes or other wrapper sufficiently large and strong enough to permit sealing, if an envelope, and to insure their safe transit to the destination.

4. It is directed that the matter be taken up with all concerned with a view to remedying the conditions cited above.

(*Cir. Memo. from the Surgeon General, April 15, 1918.*)

War Department Correspondence File.

1. You are directed to install the War Department correspondence files as the system of record keeping in your organization.

2. The equipment for your unit is that allotted for brigade headquarters (see par. 11, War Department correspondence file, 1917), for which requisition will be submitted to the Quartermaster Department.

(*Cir. Letter from the Surgeon General, May 2, 1918.*)

Censoring of Letters.

The following has been promulgated to division, department, and ports of embarkation commanders by The Adjutant General of the Army, and is furnished for your information and guidance:

1. All commanders will caution officers in their commands to strictly adhere to censorship rules in their own personal correspondence.

2. It is not deemed advisable to publish the above in orders, but the direction will be communicated to all concerned.

(*Cir. Letter from the Surgeon General, May 9, 1918.*)

Salutes.

1. The following instructions received from The Adjutant General of the Army under date of May 16, 1918, are published for your information and guidance:

(1) A marked deficiency has been observed among our troops both in this country and in France in the matter of military courtesy. As this is generally most noticeable among our newer troops, it is evidently due to insufficient or improper instruction and a consequent failure to understand the significance of these courtesies and necessity for their observance, rather than to indifference or unwillingness to comply with this part of the military men's duty.

(2) Officers, particularly commanding officers, of whatever grade will, therefore, themselves particularly observe the spirit and form of the regulations covering saluting and require such an emulation on the part of commissioned subordinates as will fit them to instruct efficiently the enlisted men of their commands. Unremitting energy and personal effort in this matter are absolutely necessary. It is especially the duty of officers and noncommissioned officers of long training and experience to instruct our new officers and soldiers in this matter, and it should be remembered by all that instruction, far more than punishment, is what is needed. "The responsibility for this deficiency in training and military department rests entirely with the commissioned personnel of the Army. If the commissioned officers of any organization observe the salutes of enlisted men and acknowledge them in a proper military manner with precision as laid down in Drill Regulations, and with interest," instead of in the perfunctory spirit too often shown, the enlisted men of that organization will undoubtedly respond and become imbued with the proper spirit of observance of military-saluting courtesy.

(3) All commanding officers will assure themselves and be responsible that the officers of their command are thoroughly familiar with Article XL, Army Regulations, 1913, as amended, and with those portions of Drill Regulations dealing with saluting. Company and detachment commanders will be held responsible that all men of their command are thoroughly instructed in so much of Drill Regulations and the above-mentioned article as is applicable to enlisted men. Special attention will be given to the instruction of enlisted men in the last subparagraph of paragraph 376 and in paragraphs 377 to 392½ as amended. Every effort must be made to give the soldier a thorough understanding of the spirit of the regulations, and not merely a parrot-like knowledge of the wording of the regulations, in order that he will learn to render these courtesies without the uncertainty and awkwardness so noticeable in the new soldier and so noticeably absent in the old, trained soldier.

(4) The courtesy most frequently rendered by military men is the personal salute. Saluting is not discipline, but the manner in which the men of any organization salute is generally a good indication of the state of discipline and instruction in their organization. Well-trained and well-disciplined soldiers always salute when they should, make the salute properly and without any appearance of uncertainty, constraint, or awkwardness.

(5) The following are a few of the points that should be made clear:

(*a*) Saluting and other forms of military courtesy are military duties. They are merely official forms of politeness and recognition of properly constituted authority and in no sense forms of servility.

(*b*) Regulations make it the duty of the enlisted man and the junior generally to salute first, but they make it equally the duty of the senior to return the salute.

(*c*) The senior is responsible in each case for proper compliance with the regulations. For an uncorrected failure to salute properly, the senior is frequently the greater offender. The failure to salute properly is generally due to ignorance, and it is the senior's duty to see that the junior is properly instructed.

(*d*) Instruction rather than punishment is the proper remedy for this deficiency in our training. The immediate commanding officer of an offender is responsible for this instruction, and it will frequently be desirable to report the delinquency to him either directly or through military channels, as circumstances require, rather than to make the correction at the time the offense is committed.

(*e*) The discretion allowed by subparagraphs 1 and 3, paragraph 384, Army Regulations, is not to be construed as excusing failures to salute on occasions when it would be perfectly proper to salute. In cases covered by this paragraph, as in other cases, the decision as to the propriety of rendering the courtesy rests on the senior, and it is his duty to correct errors.

(*f*) Corrections should be made and instruction given in a manner that will not tend to humiliate the offender or to bring discredit on the officer making the correction and giving the instruction.

(*g*) It should be remembered that officers who fail to make corrections on proper occasions require either instructions or disciplinary measures quite as much as the original offender, and it is the duty of officers observing such failures to take proper steps to correct them.

(*Cir. Letter from the Surgeon General, May 20, 1918.*)

Ward Orders.

1. It is directed that ward order books be kept on each ward under the direction of the ward surgeon.

2. All orders will be written in the order book at the time they are given and, if not written by the medical officer who gives the order, will be initialed by him before he leaves the ward, thus certifying to the correctness of the order.

3. When orders are given by medical officers by telephone, they will be entered immediately by the nurse or ward surgeon and initialed by the officer giving the order at his next visit to the ward.

(*Cir. Letter from the Surgeon General, May 29, 1918.*)

Treatment of Floors.

1. It has been decided to use an inexpensive oil dressing on the wooden floors of temporary hospital buildings instead of the expensive wax and turpentine or the crude oil preparation now being used at places.

2. The oil used should be a light paraffin oil and should be applied very sparingly at infrequent intervals.

3. After the first application floors should be kept clean by wiping up dust and dirt with a damp mop.

4. Requisition should be submitted through the usual channels for sufficient quantity of medium floor oil, and the use of all other oils, wax, etc., will be discontinued, except in the permanent buildings, where there are hardwood floors or floors suitable to treatment in accordance with the prescribed Medical Department formula.

5. Requisitions will state the price at which satisfactory oil can be obtained locally, and either authority will be given to purchase locally or the material will be furnished on requisition.

(*Cir. Letter from the Surgeon General, June 6, 1918.*)

War Department Correspondence File.

1. The following from The Adjutant General of the Army, under date of June 14, 1918, is quoted for your information and guidance:

> Reference G. O. 121, W. D., 1917, wherein is prescribed the use of the War Department correspondence file, you are informed that there is now in the press a revised edition thereof which will in the near future be ready for distribution to the service at large. Upon receipt of the revision its provisions will immediately become operative and all prior editions of the correspondence file in question, whether abridged or unabridged, will in effect be forthwith rescinded.
>
> You will advise all concerned coming under your jurisdiction accordingly.

(*Cir. Letter from the Surgeon General, June 21, 1918.*)

Clinical Records.

1. Recent communications forwarded from various medical officers suggest the necessity of careful study of clinical records of the Army. These communications have referred especially to:

(*a*) A system of indexing the diseases.

(*b*) Suggestions concerning the assignment of a member of the staff to the registrar's office, with a view to having this officer assist in—

(1) Instruction of the inexperienced in history taking.

(2) Correlation of the clinical data of the medical, surgical, and laboratory services.

(3) Assisting the registrar in indexing diseases and the staff in gleaning useful data from records.

(4) Directing the compilations of the reports for this office.

2. Communications indicate that the various hospitals have instituted local systems of filing, additional clinical record forms, special instructions to medical officers in history taking, etc. The Clinical Record Section of this office will study the entire subject of clinical records with a view to establishing a simple, uniform system without increasing the clerical burden of the hospital. To facilitate the study of this subject, you are directed to send to this office at the earliest possible date all helpful data.

(*Cir. Letter from the Surgeon General, June 25, 1918.*)

Administrative Details of Hospitals.

1. Head nurses should be assigned to all wards, including venereal and psychopathic wards.

2. In the case of patients admitted to hospitals who have returned from overseas, it is directed that the patients' relatives or friends be notified as soon as possible after admission, stating the general condition of the patients.

3. Attention is called to the accompanying copy of a letter from The Adjutant General of the Army relative to deceased soldiers, with directions that the provisions contained therein be complied with.

(*Cir. Letter from the Surgeon General, July 6, 1918.*)

NOTE.—Letter referred to in paragraph 3 is given under "deceased soldiers," page 1022.

Clinical Records.

1. The demand for improvement in clinical records and the contemplated appointment of Sanitary Corps officers as registrars necessitates the associated services of a medical officer. This association must be accomplished without absorbing the entire time of the medical officer. You will designate a member of the staff of the hospital to act as supervisor of clinical records, who will be responsible to the commanding officer, and, in addition to the duties outlined below, be assigned such professional work as these duties permit.

2. This officer will have supervision of all clinical records while the patients are under treatment, and direction of the proper recording of all medical, surgical, and laboratory data. For the purpose of uniformity he will instruct members of the staff in history taking, and assist them in compiling data for such uses as official, scientific reports, etc. The review of all clinical records, the direction of any necessary revision of the same, and in cooperation with the registrar, the filing of these records according to the system herein described.

3. A uniform system of index of diseases, described below, has been adopted for all hospitals, and should, at the earliest possible date, be established in the hospital under your command.

4. A sufficient number of complete copies of Form 52 will be made, in order that one be forwarded to the Surgeon General's Office, a second filed serially in the hospital as at present, and a third filed as an index card of the principal disease. As many more as may be necessary will be filed as the index card of each associated disease.

5. The term "principal disease" will be used to apply to conditions listed under No. 13 (cause of admission); and "associated disease" will apply to all conditions listed under No. 15 (complications, sequela, etc.), Form 52.

6. The index of diseases will be arranged alphabetically on guide cards, according to the nomenclature of diseases, paragraph 455, M. M. D. (C No. 6). The cards of the principal disease will be placed in front of cards of the same disease which has occurred in association with some other condition, and the two will be separated by a divisional guide card; for example, the guide cards of pneumonia will read "Pneumonia (principal) and pneumonia (associated)."

7. Form No. 52 is too thick to make more than one original and two carbon copies, which number will be sufficient in cases where there is only one diagnosis. In cases presenting one or

more associated diseases, it will be necessary to make a second original with one or more copies. When the associated diagnoses are numerous, only the three most important need be indexed.

8. If you have been using a system of index of diseases which enables you to make ready reference to clinical records, you need not index the histories now contained in the files of the hospital, according to the system herein described.

9. You will send to this office the name of the officer designated and the date on which the filing system is established.

Letter, Surgeon General's Office, July 10, 1918.)

Treatment of Y. M. C. A. Secretaries in Tuberculosis Hospitals.

1. A letter was recently received from the National War Work Council of the Young Men's Christian Association asking if the privilege previously granted to Y. M. C. A. secretaries of using the base and other hospitals in the camps and cantonments of the Army would be extended to them with relation to the use of tuberculosis hospitals. This request was forwarded to The Adjutant General of the Army with the following indorsement:

> Forwarded, inviting attention to the above letter from George D. Booth, camp secretary, Young Men's Christian Association, Camp Shelby, Miss., requesting authority for the admission of Y. M. C. A. secretaries to Army tuberculosis hospitals. Secretaries of the Y. M. C. A. on duty at cantonments and other camps, when sick, are accorded the privilege of being admitted to hospitals in the camps on the status of officers. It is recommended that this privilege be extended to include United States Army general hospitals for the treatment of pulmonary tuberculosis.

2. Attention is now invited to the following indorsement, and hospital commanders will here after be governed accordingly:

> War Dept., A. G. O., August 6, 1918.
> To the Surgeon General.
>
> The recommendation of the Surgeon General is approved. Secretaries of the Y. M. C. A. will be admitted to United States general hospitals for the treatment of pulmonary tuberculosis on the status of officers. When patients of this class are transferred from one hospital to another, transportation and other expenses will be borne by the patient.

(*Cir. Letter from the Surgeon General, August 14, 1918.*)

Blue Print Showing Organization of a Base Hospital.

1. Inclosed herewith is a blue print showing the organization of a United States Army base hospital, by departments, with their functions, authority, and scope, which is furnished for your information.

(*Cir. Letter from the Surgeon General, August 30, 1918.*)

Clinical Thermometers.

1. The following is an extract from a memorandum from an officer of the Inspection Division of this office relating to the disinfecting of clinical thermometers:

> In my recent inspection of hospitals I have been very much impressed with the inefficient way in which clinical thermometers are disinfected. They are often placed in small wine glasses or other containers which are not deep enough to properly disinfect the whole thermometer. Even where receptacles are of the proper size, I frequently noted that the solution in the container barely covered the bulb of the thermometer.

2. You are directed to look to the proper disinfection of all clinical thermometers at once and to see that the routine disinfection of thermometers is maintained.

(*Cir. Letter from the Surgeon General, October 11, 1918.*)

Christian Science Welfare Worker.

1. The question has been asked by the commanding officer of one of the general hospitals as to whether a member of the Christian Science War Relief and Camp Welfare Committee may visit the hospital and circulate literature and the Christian Science Monitor. The following is a copy of the request for instructions and the decision thereon by the Secretary of War:

> 1. Application has been made by Miss Campbell Iredell Jones, Christian Science War Relief and Camp Welfare Committee, to visit this hospital, circulate literature and the *Christian Science Monitor*, and publish a card in *Bombproof*.

2. Recent order of the Secretary of War directed all those activities should be under the direction of the chaplains of the post of which there are two now stationed here.

3. Request is made for instruction in regard to the work above named among troops.

(Signed) Charles E. Davis,
Lieutenant Colonel, M. C.

[3d. ind.]

680.42, General Hospital No. 18 (Mis. Div.).
War Department, A. G. O., October 21, 1918.
To the Surgeon General.

1. The orders referred to in paragraph 2 of this letter refer to religious activities only. All religious activities must be under the direction of a regularly commissioned chaplain with the approval of the commanding officer.

2. This would require all religious activities of Christian Science workers to be under the direction of a chaplain, as indicated in paragraph 1 of this indorsement.

3. All religious literature should be distributed under direction of a chaplain.

4. The following organizations have been recognized by the War Department as authorized welfare agencies:

The Young Men's Christian Association.
The Knights of Columbus.
The Red Cross.
The War Camp Community Service.

All welfare activities must be carried on through one of the above authorized societies.

By order of the Secretary of War:

(Signed) John S. Johnston,
Adjutant General.

2. The instructions contained in the indorsement quoted will be strictly complied with.

(*Cir. Letter, Surgeon General's Office, October 25, 1918.*)

Jackets for Clinical Records.

1. The clinical record section is considering the adoption of a standard jacket for envelopes to inclose and protect the clinical records. Your opinion as to the need of such is desired.

2. If a satisfactory one is in use in the hospital under your command, it is requested that a sample be forwarded to this office at the earliest possible date.

(*Cir. Letter from the Surgeon General, October 28, 1918.*)

Notification of Discharge of Soldiers on Certificate of Disability.

1. It is noted in this office that in many instances when enlisted men are discharged for disability that the responsible medical officers fail to fill out the register cards, as required by paragraph 428 (*d*), M. M. D., and to forward report cards, as required by paragraph 460, M. M. D.

2. It has also been noticed that in many instances the commanding officers of the soldiers' organizations fail to send the letter of notification of each discharge, as required by paragraph 160, A. R. However, in many cases where the notification of discharge is forwarded, the responsible medical officers fail to make out and forward the required report cards.

3. It is the duty of all medical officers concerned to see that the necessary report cards are properly filled out and sent with the monthly report of sick and wounded, even though the soldiers at the time of discharge may not have been on the sick report.

(*Cir. Letter from the Surgeon General, November 14, 1918.*)

Service Records of Returning Sick and Wounded from Overseas.

1. The attention of this office has been called to the fact that many of the sick and wounded returned from overseas are received with incomplete service records. The attention of the commanding general of the American Expeditionary Force has been called to this fact, and instructions issued by the War Department to the effect that every effort be made to have complete service records accompany each soldier returned. As it is probably impossible to insure this in every case, arrangements have been made whereby the delayed service records will be sent direct to The Adjutant General's Office by special courier at regular intervals. Attention is invited to the following instructions which have been issued to the commanding generals of the ports of embarkation:

> The Secretary of War directs that when enlisted men are received from the American Expeditionary Forces without individual records and when such men are sent to a hospital or elsewhere beyond your jurisdiction that you report to this office the name, rank, and organization of each soldier, together with a statement as to the disposition made of each man, in order that this office may arrange for proper and prompt disposition of the individual records.

2. Whenever the complete service records, therefore, do not accompany the soldier or are not received within a reasonable time after the arrival of the soldier, application should be made direct to The Adjutant General for the records in the case.

(*Cir. Letter from the Surgeon General, December 3, 1918.*)

Treatment and Discharge of Sick and Wounded.

1. The attention of medical officers is called to the provisions of Circular 188, War Department, December 31, 1918, respecting the discharge of disabled soldiers.

2. It is the policy of the War Department thereunder, subject to the provisions of section 4, act June 15, 1917, governing the termination of the service of men, drafted or enlisted, under the act May 18, 1917, to retain, so far as practicable, under military control, for the purpose of active medical and surgical treatment:

(*a*) Officers and soldiers suffering from acute diseases, or acute exacerbations of chronic diseases, or unhealed lesions.

(*b*) Officers and soldiers suffering from communicable diseases, or who are "carriers," whose discharge would be a danger to the civil community.

(*c*) Officers and soldiers suffering from disabilities incurred in the line of duty which are correctible within their terms of service or enlistment.

(*d*) Officers and soldiers suffering from chronic or permanent disabilities incurred in the line of duty which are susceptible for improvement by measures for mental or physical reconstruction designed to fit them for return to their homes, for the resumption of their former vocations, or with their consent, for the industrial opportunities or the training courses provided by the Federal Board for Vocational Education.

3. In the accomplishment of this policy, it is the intention to restore officers and soldiers, who are held in service, as provided in paragraph 2, to health and function as fully as possible, considering the nature of their disabilities, the limitations of the military service, and the other provisions which the Government has made for the care of the permanently disabled. The National Home for Disabled Volunteer Soldiers provides retreats for former soldiers who have served in time of war and are unable to maintain themselves. The Bureau of War Risk Insurance provides compensation and medical and hospital treatment for disabilities incurred in the line of duty. The Federal Board for Vocational Education provides courses in vocational training, and maintenance during the same, for soldiers disabled in the line of duty who desire to take them. It is not the department's purpose, therefore, to retain disabled officers and soldiers under treatment indefinitely, thus exposing them to the danger of hospitalization, but rather only so long as is necessary to complete that degree of physical restoration indicated in section (*d*) of the preceding paragraph. Such measures of restoration having been taken, discharge for disability, as prescribed in 159 A. R., should be recommended promptly in the cases of permanently incapacitated drafted or enlisted men. In the case of officers not of the permanent establishment, the procedure prescribed in Circular 73, War Department, November 18, 1918, governs.

4. In applying the foregoing principles, the following special rules will ordinarily be observed:

(*a*) Cases of tuberculosis should be kept under treatment in military hospitals until the disease is arrested, or until it is ascertained that they are progressive in type or incurable.

(*b*) Cases of organic heart disease and manifest chronic nephritis should be recommended for discharge.

(*c*) Cases of general paresis or of insanity complicated by epilepsy (insane epileptics) should be sent to St. Elizabeths or disposed of as otherwise provided in paragraphs 464 to 470, Army Regulations, as amended.

(*d*) Other insane who present particularly dangerous tendencies, or in whom all the clinical evidence points to incurable conditions, should be likewise disposed of.

(*e*) Soldiers showing symptoms of insanity, whose cases are not included in subparagraphs (*c*) and (*d*) should be retained in military hospitals under observation and treatment for a period not exceeding four months. If at the end of four months the symptoms continue, like disposition will be made of these cases also.

(*f*) All cases of epilepsy not covered in (*c*) will be recommended for discharge on certificate of disability.

(*g*) Drug addicts will be promptly recommended for discharge.

(*h*) The blind or nearly blind should be retained until they are functionaly able to care for themselves and are otherwise physically fit for discharge.

(*i*) The deaf or nearly deaf may be retained until they have learned lip reading and are otherwise physically fit for discharge.

(*j*) Cases of amputation of the leg or arm, or both, should be retained in hospital until the stumps have healed, suitable provisional artificial limbs provided, and reasonable proficiency in the use of such limbs acquired.

(*k*) Soldiers suffering from surgical disabilities incurred in the line of duty which are correctible in whole or part within their terms of service should, if consented to by the soldier, be retained for the necessary corrective measures. If corrective measures are contraindicated within a reasonable period, discharge will ordinarily be recommended. Cases of disability not incurred in the line of duty, which may be corrected by proper treatment, may be retained for correction or be recommended for discharge as deemed most appropriate.

5. Cases of unimprovable chronic disease not enumerated in the above special rules should be dealt with under the principles incorporated in paragraph 3.

6. The question of line of duty will be determined conformably with the provisions of paragraph 448, Manual for the Medical Department, as amended.

(*Cir. Letter No. 41, Surgeon General's Office, January 21, 1919.*)

Red Cross Activities at Base and General Hospitals.

1. The relations of the Red Cross to the Medical Department are governed by Special Regulations No. 61, October 8, 1917, and Paragraph V, G. O. 17, W. D., February 13, 1918. Attention is called also to Paragraph III, Bulletin 50, W. D., August 31, 1918.

2. In addition to the organizational activities specified in Special Regulations No. 61, the provisions of Paragraph V, G. O. 17, of 1918, especially sections 1, 2, and 5, should be borne in mind. It is not practicable to enumerate in detail what the Red Cross may with propriety be asked or permitted to do. The order indicates in a general way the character of the things which would be proper, and the commanding officer should, in carrying out the order, be guided by the principles therein implied.

3. In the matter of emergency donations by the Red Cross under G. O. 17, it is part of the duty of the commanding officer to point out the needs and urge the remedies as the emergencies arise.

4. The Government is able and ordinarily prepared to furnish all supplies necessary to meet the needs of the sick and wounded. The funds of the Red Cross are given by its members and patrons, not to duplicate but to supplement the supplies and activities of the Government. Except in emergencies, it is therefore considered improper to call upon the Red Cross to furnish articles that are listed in the supply tables of the Medical Department, or those that are usually issued on application through regular channels of military supply though not listed in the tables. No request should be made for such articles as beds, bedding, medicines, surgical instruments, or the common surgical dressings, such as gauze, absorbent cotton, and bandages. These articles are obtainable by the Government in abundance, and if hospitals do not have adequate supplies thereof on hand, it is usually because requisitions have not been forwarded in time—in other words, because of poor administration.

5. Other gifts, not to meet emergencies and beyond the scope of military supplies, are subject to the instructions of this office, May 4 last, as follows:

> When a gift proposed is of a more permanent type, the first formal step will be the presentation to the Surgeon General, for his judgment and approval, of a memorandum of the suggested action from the officer in charge, together with a brief statement of the need. Upon the issue of a memorandum of approval, the cooperation of the Red Cross may be invoked. It will aid in putting the special matter on the way to a speedy conclusion if a memorandum from the Red Cross be given, outlining its interest and purpose in the matter, the gift in some detail, and the station at which it is suggested the gift be used. An indorsement by the Surgeon general will then be issued authorizing the acceptance and delivery of the gift to the officer in charge at the designated station.
>
> It should be made clear that the gift will then become the property of the Government, without restriction or condition in regard to its ultimate use and disposition. At the same time, it should be emphasized that, in so far as possible, under conditions as they arise, the purpose of the donor will be fully recognized. Further, in so far as it is possible to lay down any rule for guidance based on mutual understanding, gifts are to be in kind and not in money.

6. Red Cross houses for convalescents and Red Cross nurses' homes may be established at hospitals as indicated in letter this office August 14, 1918. The convalescent houses are in effect wards of the hospitals, equipped, however, by the Red Cross, not only with ordinary furniture, but with materials for amusement and recreation.

7. As indicated in the same letter, the Red Cross representative at the hospital may be furnished information as to the condition and progress of patients therein with a view to keeping their families advised in the premises, it being understood that the Red Cross acts unofficially in these cases, but subject to the supervision of the commanding officer.

8. Red Cross representatives accredited to commanding officers of military hospitals, under G. O. 17, are able to bring to bear upon the personal and social problems of soldiers in the hospitals the large resources of the organization which they represent. Through the local chapters of the home service, they are able to get in touch with the family and the home community of practically every soldier in the service of the United States. Through the communication service of the Red Cross, they are able to inform the soldier concerning his home conditions, as well as to inform the soldier's family concerning the soldier who is undergoing treatment in the hospital.

9. In military hospitals functioning in physical reconstruction the contact of the Red Cross representatives with the patients of the hospital may be most helpfully made through the chief educational officer and the service which he directs. In this way will be secured a closer coordination of the extra medical agencies which are working for the rehabilitation of the disabled men.

The members of the educational staff, particularly those who, like the reconstruction aides, do the larger part of their work in the wards, have large opportunities to learn the needs of individual patients, and are interested in securing the most favorable mental attitude on the part of patients toward their hospital treatment. They, therefore, have a natural interest in utilizing such facilities as the Red Cross home service affords. One function of those reconstruction aides who are qualified as social workers is to serve as a liaison between the hospital and the representative of the Red Cross, and thus make the resources of the latter available to a much larger number of patients than would otherwise be the case.

10. A full use of these agencies is desired in all military hospitals. It is important, especially at this time, that every reasonable effort be made to keep up the morale of patients so their convalescence may be as rapid and complete as possible. To this end they should contentedly remain in the hospital until their medical and surgical care has been completed, and it is thought that the coordinated activities of the educational service, through the medical social worker, with the home service of the Red Cross will help to accomplish it.

11. The procedures indicated in paragraphs 8, 9, and 10 involve no conflict between the work of the Federal Board for Vocational Education and the Home Service of the Red Cross.

(*Cir. Letter No. 51, Surgeon General's Office, January 27, 1919.*)

Service Records.

1. The following copy of cablegram, sent by the commanding general, American Expeditionary Forces, is furnished for your information and guidance:

FEBRUARY 4.

To: The Adjutant General, No. 2,096:

PARAGRAPH 9. Request that hospitals in the States submitting lists to the central records office for service records be directed to prepare same in triplicate, alphabetically, each letter on separate page, in all cases giving surname, number, Christian name, rank, and former organization, particular attention being given in all cases to the correct spelling of name.

(Signed) PERSHING.

(*Cir. Letter No. 77, Surgeon General's Office, February 6, 1919.*)

Service and Clinical Records of Soldiers Transferred to Convalescent Centers.

1. Reports have been received indicating that the work at convalescent centers is being seriously handicapped by the failure of certain hospitals to forward service records and other papers of patients transferred to these centers. The commanding officer of the convalescent center at one camp states that in no instance have proper records accompanied the men so transferred. Many of these men are eligible for discharge soon after arrival at convalescent center, and the delay in forwarding records seriously hampers the work of the organization. Moreover, the lack of information concerning essential facts in the clinical history of patients transferred embarrasses the work of the medical officers and tends to delay recovery or discharge.

2. The Surgeon General directs that all papers pertaining to the transfer of patients to convalescent centers be forwarded either with the patient, or by mail immediately following their departure.

3. A brief abstract of the clinical record, including any X-ray or laboratory findings, will accompany each case transferred.

(*Cir. Letter No. 86, Surgeon General's Office, February 12, 1919.*)

Delays in Answering Correspondence.

1. Long delays are frequently noted in the return of papers forwarded from this office for report and recommendation. Delays of this character interfere seriously with the prompt transaction of business and cause criticism of the Medical Department.

2. In the future, telegrams will be answered within 12 hours after receipt, and letters within 48 hours. In case this is not practicable for any reason, a report showing the cause of delay in each case will be submitted.

(*Cir. Letter No. 97, Surgeon General's Office, February 20, 1919.*)

Authority to Admit Discharged Soldiers as Beneficiaries of the War Risk Bureau.

1. The War Department has placed at the disposal of the War Risk Bureau all Army hospitals. It is purposed to admit to any Army hospital any discharged soldier who is entitled to hospital treatment under the terms of the war-risk act and to treat that soldier at the expense of the War Risk Bureau on a per diem basis at the rates of charge for subsistence and medicines prescribed by paragraph 1460, A. R., for civilian patients on the status of enlisted men.

2. Commanding officers of hospitals will therefore admit former soldiers on the official request of authorized representatives of the War Risk Bureau, and bills will be rendered monthly to the War Risk Bureau at a per diem cost as given above.

(*Cir. Letter No. 98, Surgeon General's Office, February 20, 1919.*)

Discharged Soldier Applying for Admission to Army Hospital.

1. The following indorsement from the Director, Bureau of War Risk Insurance, is published for the information and guidance of all concerned:

> 1. Reference, letter from Colonel J. H. Kennedy, office of the surgeon, port of embarkation, Hoboken, N. J., dated January 20, 1919, relative to the care of discharged soldiers who are suffering from disability, and in need of hospital or institutional care:
>
> 2. It being an established fact that any soldier having been honorably discharged after October 6, 1917, for disability incurred in line of duty, and that his present condition is a reactivation of that disability or is consequent upon it, such discharged soldier is entitled to hospital or sanitorium care under the provisions of the war-risk insurance act.
>
> 3. If the case is one of emergency, the chief medical adviser of this bureau should be informed by telegraph of the case, with the name, rank, organization, and character of the disability, and suggestions for treatment needed. The nearest representative of the United States Public Health Service in the city may also be notified, as these officials are authorized to take action in such cases. If there be no such official in the vicinity, arrangements will be made with local physicians or institutions to take temporary charge of the case.

2. When the case applying for hospital treatment is not one of emergency, the information called for in paragraph 3, above, should be furnished the Chief Medical Adviser, War Risk Bureau, by letter.

(*Cir. Letter No. 102, Surgeon General's Office, February 20, 1919.*)

Use of Sick Beds by Men on Duty Status.

1. Attention is invited to the following correspondence with reference to the use of beds and bedding purchased for the use of the Medical Department:

S. G. O. 721 (Attending Surgeon's Office, Washington, D. C.) F.

[1st ind.]

War Department, S. G. O., March 12, 1919.
To the Director of Purchase, Storage, and Traffic.

1. Requesting decision regarding paragraph 21, recommendation (*c*) in the attached report of Colonel Chamberlain and the reply made by Colonel Metcalf in last sentence of his letter of March 10, 1919. It would appear to this office that beds and bedding of superior type purchased specifically for use of the sick should not be used for men on duty status, regardless of the fact that all are now handled by the Division of Purchase, Storage, and Traffic (par. 523, M. M. D.).

For the Surgeon General:

D. C. HOWARD,
Colonel, Medical Corps.

MARCH 15, 1919.

Memorandum for the Surgeon General of the Army.
Subject: Use of sick beds by men on duty status.

1. The Secretary of War directs that these papers be returned with the information that the views of the Surgeon General expressed in the first indorsement thereon, March 12, 1919, are approved.

GEO. W. BURR,
Major General, Assistant Chief of Staff,
Director of Purchase, Storage, and Traffic.
By J. S. FAIR,
Colonel, General Staff,
Assistant Director of Purchase, Storage, and Traffic in the Absence of the Director.

(*Cir. Letter No. 140, Surgeon General's Office, March 18, 1919.*)

Concentration of Patients and Reduction of Personnel.

1. It is now necessary to economize in personnel to the fullest possible extent.

2. To this end, commanding officers of all hospitals will concentrate the patients in as few wards as possible, consistent with good management, thus making possible a reduction in personnel, particularly of medical officers and nurses, and a general reduction in overhead cost.

(*Cir. Letter No. 160, Surgeon General's Office, March 26, 1919.*)

Admission of Civilians.

1. The following copy of indorsements relative to the admission of Y. M. C. A. secretaries, Jewish Welfare secretaries, Red Cross Field Directors, K. of C. secretaries, is furnished for your information and guidance.

[Ist ind.]

S. G. O. 701 (General),
War Department S. G. O., April 17, 1919.
To The Adjutant General of the Army.

1. It is recommended that Y. M. C. A. secretaries, Jewish Welfare secretaries, Red Cross Field Directors, and Knights of Columbus secretaries on duty at the various cantonments be admitted, when sick, to the base hospitals for treatment, on the status of officers, subject to payment for subsistence and medicines at the rates prescribed in paragraph 1460, Army Regulations.

For the Surgeon General:

FLOYD KRAMER,
Lieutenant Colonel, Medical Corps, U. S. Army.

[2d ind.]

701.5 (Misc. Div.).
HGL/HFP,
War Department, A. G. O., April 23, 1919.
To the Surgeon General.

Approved as recommended in first indorsement hereon. Commanding officers of base hospitals should be advised accordingly by the Surgeon General's Office.

By order of the Secretary of War:

H. G. LEARNARD, *Adjutant General.*

(*Cir. Letter No. 190, Surgeon General's Office, May 1, 1919.*)

Line of Duty.

1. The following correspondence is quoted for the information and guidance of all concerned:

WAR DEPARTMENT,
THE ADJUTANT GENERAL'S OFFICE,
Washington, January 23, 1919.

A. G. 201 (Ebner, Jacob) Enl.
From: The Adjutant General of the Army.
To: The commanding officer, Fort Jay, N. Y.
Subject: Line of duty.

1. In the case of Pvt. Jacob Ebner, Seventh Co., C. A. C., who was discharged at Fort Jay, N. Y., January 20, 1919, on account of cerebrospinal syphilis, the certificate of disability shows that the disease was incurred in line of duty.

2. In view of the nature of the disability, a further statement is desired from Robert E. Archibald, first lieutenant and battalion adjutant Twenty-second Infantry, casuals, and Capt. Harve M. Stricklen, and First Lieut. D. S. O'Donnell, M. C., who signed the certificate of disability, showing the reasons on which was based their conclusion that the soldier's disability was incurred in line of duty.

By order of the Secretary of War:

(Signed) NOWAKOSKI,
Adjutant General.

[1st ind.]

14548, Ebner, Jacob (R. D.)
Headquarters, Fort Jay, N. Y., January 24, 1919.
To Commanding Officer, detachment of casuals and post surgeon (in turn), Fort Jay, N. Y., for compliance.

[2d ind.]

2278, Ebner, Jacob (C. R. D.).
Casual Office, Fort Jay, N. Y., January 26, 1919.
To the post surgeon, Fort Jay, N. Y.

1. Forwarded, inviting attention to basic communication and to first indorsement.

2. The original Form 17, A. G. O. (surgeon's certificate of disability), accomplished in this case by me for Pvt. Jacob Ebner, certified that the condition was not incurred in line of duty. Subsequently I was informed by the post surgeon, and the office of the department surgeon, Eastern Department, that this was within a class which had been passed upon as properly to be called "in line of duty."

The certificate was then altered to so read. Attached is copy of correspondence furnished me by the office of the department surgeon, with whom the matter was taken up before papers were finally accomplished and forwarded.

ROBERT E. ARCHIBALD,
First Lieutenant and Battalion Adjutant, Twenty-second Infantry, Casual Officer.

[3d ind.]

Office of the Surgeon, Fort Jay, N. Y., January 28, 1919.
To the commanding officer, Fort Jay, N. Y.

1. The line of duty in the above case was based upon the following: This man was accepted for full military service at Fort Slocum, N. Y., December 11, 1914. He performed full military duty up to and including July 26, 1918. Upon interrogation, gave no history of infection or does medical history accompanying this soldier from Panama give history of infection subsequent to enlistment, and in view of the decision rendered by the Surgeon General in the third indorsement of the inclosed communication in the case of Pvt. George Gidnard and Wagoner Charles A. Parsons, and in the purview of General Order No. 47, subdivision No. 2, W. D., 1918, this soldier was given "in line of duty" for the disqualifying disability.

2. First Lieut. David S. O'Donnell, M. C., was honorably discharged from the service January 16, 1919.

HARVE H. STRICKLEN,
Captain Medical Corps.

[4th ind.]

14548, Ebner, Jacob (R. D.).
Headquarters, Fort Jay, N. Y., January 29, 1919.
To The Adjutant General of the Army, Washington, D. C., inviting attention to second and third indorsements of within communication.

JNO. C. F. TILLSON,
Colonel, Twenty-second Infantry, Commanding.

[5th ind.]

201 (Ebner, Jacob) Enl.
War Department, A. G. O., February 3, 1919.
To the Surgeon General of the Army, for remark and recommendation.

By order of the Secretary of War:

JAMES HUNTER, *Adjutant General.*

[6th ind.]

S. G. O. 220.8 (discharges, G. H. No. 30) K.
War Department, S. G. O., February 14, 1919.
To The Adjutant General of the Army, returned.

1. Under the provisions of paragraph 448, M. M. D., officers and enlisted men who have been accepted for service at any military station after the first physical examination—

"Shall be considered to have contracted in the line of duty any subsequently determined physical disability, unless such disability can be shown to be the result of the patients' own carelessness, misconduct or vicious habits, * * * or unless the history of the case shows unmistakably that the disability existed prior to entrance in the service."

2. There are two classes of cases involved in the determination of "line of duty" status of soldiers recommended for discharge on account of late manifestations of syphilis:

First. The class in which the disease has been contracted since entrance in the service.

Second. The class in which the disease existed at time of entrance into the service.

The disease in cases of the first class would be held to be the result of the soldier's own "misconduct," and therefore incurred not "in line of duty." The same ruling would ordinarily follow for any subsequently developed disability resulting from the disease. The determination of "line of duty" status in cases of the second class is more difficult. In these cases there is no "misconduct" involved. (Digest, J. A. G., p. 12, Digest of Opinions, J. A. G., April, 1918.)

3. Under Selective Service Regulations and Special Regulations 65, W. D., syphilis is not a cause for rejection, and as a consequence many thousands of known syphilitic registrants have been drafted and accepted for general military service. A small percentage of such men may be

expected to develop such late nervous manifestations of the disease as paresis, tabes dorsalis, and cerebrospinal syphilis. A few soldiers already have been returned from France on account of insanity (paresis), and while the actual cause of the disability is syphilis, the immediate and exciting cause has been held to be prolonged physical and mental stress and fatigue incident to active military service. In these cases it is the opinion of the most competent psychiatrists that if the soldier had been permitted to remain in his civil environment and be spared the stress incident to military service, the development of paresis or other late nervous manifestation of disease might have been long delayed. If it is shown that insanity (paresis) developing in a soldier in active service has been precipitated by stress and strain incident to such service, it is believed the disability should be held as incurred "in line of duty," even though the actual cause of the disability is known to be syphilis and which was known to have existed when the soldier was accepted for military service.

4. No modification or change in existing regulations (par. 448, M. M. D) appears necessary or desirable. Each case should be determined on its merits, after a careful review of the medical history and consideration of the length and character of service and all other facts pertinent to the case. In the view of this office, a distinction may be made in these cases between the disability for which the soldier is discharged and the disease causing the disability. A soldier is discharged on account of insanity, the cause of which is syphilis. The disability in this case is insanity. The disease is syphilis. The soldier had the disease when accepted for service, but at that time there was no disability. It is believed that the Government, in accepting such men under the draft act should assume the responsibility for any subsequent disability due to syphilis which may develop and which can be attributed to the hardships or exposures of military service.

5. The cases of Pvt. George Gidnard and Wagoner Charles A. Parsons, referred to in this correspondence, were recommended for discharge on account of disability "in line of duty," as it was shown clearly in the medical history that stress of active service was responsible for hastening the progress of the disease and causing the mental breakdown. The disease (syphilis) in both cases existed in latent form when the men entered the service, but the disability itself was held to have developed as a result of service and therefore "in line of duty." The case of Jacob Ebner, Seventh Co., C. A. C., is not properly comparable with the two cases previously referred to in this paragraph. The medical history in the Ebner case is not complete and this office can not express an opinion without further information. If it is shown that the primary infection was contracted since the soldier entered the service, the disease should be held as due to "misconduct" and not "in line of duty."

6. Reference of this paper to the Judge Advocate General of the Army for decision is recommended.

For the Surgeon General:

D. C. Howard,
Colonel, Medical Corps.

[7th ind.]

201 (Ebner, Jacob) Enl.
War Department, A. G. O., February 19, 1919.
To the Judge Advocate General of the Army.

1. Referred with request for an expression of opinion as to whether or not the disability resulting in the discharge of Pvt. Ebner should be regarded as having been incurred in line of duty.

By order of the Secretary of War:

James Hunter, *Adjutant General.*

[8th ind.]

Gen. Adm., Morgan; H. H., J. A. G., 220.46.
A. G. 201 (Ebner, Jacob) Enl.
War Department, J. A. G. O., February 21, 1919.
To The Adjutant General.

1. The opinion of this office is requested upon the question whether the disability resulting in the discharge of Pvt. Jacob Ebner should be regarded as having been incurred in line of duty. It appears that Pvt. Ebner was accepted for full military service at Fort Slocum, N. Y., December 11, 1914, and performed full military duty up to and including July 26, 1918; that he was discharged January 20, 1919, for disability on account of cerebrospinal syphilis; and that his medical history shows no infection subsequent to enlistment.

2. It is the opinion of this office that the disability resulting in the discharge of Pvt. Ebner should be regarded as having been incurred in line of duty. He was accepted for full military service and performed full military duty for more than three years. The disease which ultimately caused his disability, if existing at the time of his enlistment, was latent. In the absence of any showing of any misconduct on the part of the enlisted man during the period of his service contributing to cause of the disease, the disability must be regarded as having been incurred in line of duty, particularly in view of the provisions of section 300 of the war-risk act, as amended by the act of June 25, 1918 (Pub. 175, 65th Cong.), which specifically requires that, for the purposes of compensation under said act, an enlisted man shall be held and taken to have been in sound condition when examined, accepted, and enrolled for service.

E. H. Crowder,
Judge Advocate General.

[9th ind.]

A. G. O., February 28, 1919.
To the Assistant Secretary of War, recommending approval of the opinion of the Judge Advocate General of the Army, as set forth in the eighth indorsement.

P. C. Harris,
The Adjutant General.

Approved March 3, 1919.
Benedict Crowell,
Assistant Secretary of War.

[10th ind.]

201 (Ebner, Jacob) Enl.
War Department, A. G. O., May 5, 1919.
To the Surgeon General.

(*Cir. Letter No. 203, Surgeon General's Office, May 7, 1919.*)

Preparation of Notice of Discharge (Treasury Department, B. W. R. I., Form 333).

1. The following instructions from The Adjutant General of the Army, under date of April 30, 1919, are quoted for the information and guidance of all concerned:

> Inclosed herewith is a copy of Circular 226, War Department, 1919, which indicates the proper procedure in preparing and disposing of the notice of discharge (Treasury Department, B. W. R. I., Form 333) and notification of discontinuance of class E allotments.
>
> You are directed to take the necessary measures, including inspections from time to time, to insure that the provisions of this circular are strictly enforced.

2. Compliance with the above instructions is hereby directed.

(*Cir. Letter No. 205, Surgeon General's Office, May 10, 1919.*)

Length of Stay in Hospitals.

1. For the preceding six months the base hospitals situated at National Army camps have carried a large share of the burden of treating overseas cases. Coincident with the reduction of personnel in our hospitals, and with the closing of many of the base hospitals and the withholding of overseas cases from many more, the care of overseas cases will now fall more and more upon the general hospitals.

2. It is very necessary that the commanding officers of the general hospitals pay particular attention to the length of time that sick remain in the hospitals, making the turnover as rapid as possible, consistent with existing regulations.

3. With this end in view it is directed that each commanding officer study this problem with a view to shorten the average length of time the cases remain in hospital, and see that this object is obtained in such a manner as to bring no discredit or criticism upon the Medical Department.

(*Cir. Letter No. 215, Surgeon General's Office, May 19, 1919.*)

Medical Treatment for Discharged Soldiers under the War-Risk Insurance.

1. The following communication with reference to medical treatment for discharged soldiers under the war-risk insurance act has been received from the Surgeon General of Public Health Service. It is requested that you bring this to the attention of all concerned within your jurisdiction:

> Treasury Department,
> Bureau of the Public Health Service,
> *Washington, June 18, 1919.*
>
> Surgeon General of the Army,
> *Washington, D. C.*
>
> Sir: I desire to invite your attention to the fact that the United States has been divided into 14 districts with a commissioned officer of the service in charge of each district, who is prepared to render aid to all discharged soldiers, sailors, and marines who are beneficiaries of the war-risk insurance.
>
> In view of the fact that a great many men are being discharged from various hospitals of the Army who may require some further treatment upon their return to civilian life, I respectfully request that you issue instructions to the commanding officers of your various hospitals, inviting their attention to the fact that these district offices have been established and that they inform the men as they are discharged that the Public Health Service, through these offices, is prepared to furnish them any medical attention to which they are entitled.
>
> A list of these district supervisors is enclosed for your information and you are requested to notify your commanding officers that any request made to them will receive immediate attention,

and that through their organization the district supervisor is prepared to render assistance to the discharged soldier, either in his home town or at some near-by location.

The above-outlined plan, it is believed, will simplify matters a great deal and will be of vast benefit to the discharged soldier, and I wish to urge that, if possible, these instructions be given.

Respectfully,

(Signed) RUPERT BLUE,
Surgeon General.

(*Cir. Letter No. 243, Surgeon General's Office, June 23, 1919.*)

Issue of Garrison Shoes to Enlisted Men, M. D., at all Hospitals.

1. In connection with Circular Letter No. 181, dated April 19, 1919, the following indorsement from the Director of Purchase and Storage, relative to the issue of russet shoes to enlisted men of the Medical Department on duty at all hospitals, is published for the information and guidance of all concerned:

> 1. Information has this day been given to all zone supply officers that the issue of new russet shoes to enlisted men of the Medical Department on duty at all hospitals is authorized.

(*Cir. Letter No. 254, Surgeon General's Office, July 7, 1919.*)

Data to be Shown on Carbon Copies of Official Correspondence.

1. The following War Department circular, dated July 17, 1919, is quoted for the information and guidance of all concerned:

> CIRCULAR No. 358
>
> WAR DEPARTMENT,
> *Washington, July 17, 1919.*
>
> DATA TO BE SHOWN ON CARBON COPIES OF OFFICIAL CORRESPONDENCE.
>
> 1. In numerous communications of official correspondence the original is typed on paper on which are printed or stamped the name and location of the post, camp, station, or headquarters from which the communication emanates, while on the carbon or file copies such name and location are omitted. This renders it difficult and sometimes practically impossible to locate the station of the writer after the carbon or the file copies are separated from the original.
>
> 2. Hereafter in all official correspondence the name and location of the post, camp, station, or headquarters as printed or stamped on the original copy of the communication will be shown on the carbon or file copies.

(*Cir. Letter No. 266, Surgeon General's Office, July 21, 1919.*)

Clinical Records of Patients Transferred.

1. In order to obviate the necessity for copying the clinical records of all patients transferred, it is directed that in future in transferring patients from one hospital to another the clinical records of such cases, including complete histories, laboratory reports of X-ray findings, etc., of all cases transferred be forwarded to the receiving hospital.

2. The sick and wounded record cards of such cases transferred will be considered sufficient for the retained records of the transferring hospital.

(*Cir. Letter No. 271, Surgeon General's Office, July 28, 1919.*)

Telegrams.

1. In the future all telegrams from this office will bear a number.

2. It is requested that all replies refer to that number; e. g., "Re 1, 2, 3," instead of "Attention............"

(*Cir. Letter No. 278, Surgeon General's Office, August 12, 1919.*)

Releasing the War Department From Further Responsibility in the Cases of Soldiers Discharged on Certificate of Disability Under Circular 188, W. D., 1918.

1. The following correspondence is published for the information and guidance of all concerned:

> JULY 2, 1919.
>
> From: The Surgeon General of the Army.
> To: The camp surgeon, Camp Zachary Taylor, Ky.
> Subject: Discharge of patients, base hospital.
>
> 1. Information has reached this office that it has been the practice at the base hospital, Camp Taylor, to require, in some cases, a patient about to be discharged to sign a mimeographed form, in which he is supposed to release the Government from further responsibility in his case, and

which, in effect, was intended to prevent the soldier's making any subsequent claim against the Government.

2. This practice is not authorized, and information is desired promptly as to whether this practice has been in effect, as stated, and if so, it is desired that the blank forms in question be forwarded to this office, with such explanation and comment as the commanding officer may desire to make relative thereto.

3. If such practice has been in effect it should be discontinued immediately.

By direction of the Surgeon General:

D. C. Howard,
Colonel, Medical Corps.

[1st ind.]

Reference S. G. O. 701-4 (Camp Zachary Taylor) D.
Headquarters, Camp Zachary Taylor, Ky., office of the camp surgeon, July 5, 1919.
To the Surgeon General, United States Army, Washington, D. C., returned.

1. The mimeographed form referred to, a copy of which is inclosed, has been used in all cases of disabled soldiers discharged from hospital under Circular No. 188, War Department, December 31, 1918.

2. It was devised to clearly impress upon persons assuming responsibility for further necessary treatment of cases discharged under this circular the importance of such responsibility to the end that thorough and adequate treatment would be afforded in each case and, further, that the military authorities should not be held responsible for the outcome and results of cases of illness and injury after treatment had been taken out of their hands and undertaken by private parties. In other words, it placed responsibility where it belonged and was a measure adopted by the commanding officer to determine that further treatment was assured. The form deals only with the matter of responsibility for "care and treatment" and makes no mention as to claims for disability or pensions and was not intended to constitute a waiver of any rights for compensation under the war-risk insurance or Government pensions, and was not intended to prevent the soldier making any subsequent claim against the Government.

3. All cases discharged under Circular 188 have a 10 per cent disability or more. All are entitled to compensation. All are eligible for vocational training, and in case further treatment is required, have the right of admission to the war-risk insurance hospitals. Every man discharged from this camp is thoroughly informed upon all of these matters by representatives of the War Risk Insurance Bureau and Federal Board for Vocational Training.

4. Copy of notice to all discharged soldiers regarding their rights to admission to war-risk insurance hospitals in case further treatment is required is also inclosed.

5. Information is requested as to whether it is considered necessary for the hospital authorities to protect themselves by documentary evidence further than that required in paragraph 1 (*a*), Circular 188, W. D., viz, that notation upon physical examination form include names and addresses of the persons assuming responsibility for such continued treatment and care. The mimeographed form has been discontinued pending further instructions.

W. L. Pyles,
Colonel, Medical Corps, U. S. Army.

[2d ind.]

S. G. O. 701-4 (Camp Zachary Taylor) D.
War Department, S. G. O., July 10, 1919.
To The Adjutant General of the Army, forwarded.

1. For decision with reference to paragraph 5 of the preceding indorsement. This matter was brought to the attention of this office by Senator Harry S. New, of Indiana, who objected to the requirement that men about to be discharged sign away their rights to subsequent claims that they might have against the Government. The objectionable features appear to be the final clause of the request signed by the soldier, reading as follows:

REQUEST FOR DISCHARGE FROM SERVICE OF ....
(Name of soldier.)

....
(Place.)

....
(Date.)

I, ..., fully realizing that I am in need of further hospital and medical treatment, and that I have not yet attained the maximum improvement possible in my case, I hereby request immediate discharge from military service; and in case such discharge is granted I do hereby fully release the War Department from all responsibility for my further care and treatment.

....

REQUEST AND STATEMENT IN REGARD TO DISCHARGE OF ....
(Name of soldier.)

....
(Place.)

....
(Date.)

I, ... to .... , fully realiz-
(Name and relationship.) to (Name of soldier.) (Home address.)
ing that said .... is in need of continued care and treatment, I hereby request the immediate discharge of said .... from military service, and in case such discharge is granted, I will assume all responsibility for such continued care and treatment until the maximum improvement possible in this case is attained.

I do further certify that I am financially able to provide such care and treatment, and in case such discharge is granted, do hereby fully release the War Department from further responsibility for the care and treatment of said ....

....

NOTE.—A statement from a local banker or business man personally acquainted with the responsible person must accompany this request. This statement must certify as to the financial ability of the responsible person to carry all necessary care and treatment of the discharged soldier.

"I do hereby fully release the Government of the United States from all responsibility for my further care and treatment."

And the final clause of the request, signed by the relative or friend of the soldier, reading as follows:
"do hereby fully release the Government of the United States from further responsibility for the care and treatment of said ...."

2. If the objectionable clauses quoted above are omitted, it is the view of this office that the form as modified may serve a useful purpose in connection with discharges under the provisions of Circular 188, W. D., 1918, and it is recommended that the continued use of the form, with the objectionable features omitted, be authorized.

For the Surgeon General:

D. C. HOWARD,
Colonel, Medical Corps.

[3d ind.]

220.811 (Misc. Div.).
War Department, A. G. O., July 22, 1919.
To the Surgeon General.

The continued use of this form is authorized except that the words "War Department" will be substituted for the words "Government of the United States" wherever they appear.

By order of the Secretary of War:

ALBERT GILMOR, *Adjutant General.*

(*Cir. Letter No. 306, Surgeon General's Office, September 24, 1919.*)

Hospital Treatment for Discharged Soldiers, Sailors, and Marines.

1. In connection with S. G. O. Circular Letters Nos. 98, 102, 243, and 297, the following instructions issued by the War Department are quoted for the information and guidance of all concerned:

BULLETIN
No. —.

WAR DEPARTMENT,
Washington, September —, 1919.

Hospital treatment for discharged soldiers, sailors, and marines, paragraph 1, Section II, Bulletin No. 12, War Department, 1919, is amended to read as follows:

1. Discharged soldiers, sailors, and marines are civilians under the law, and in the matter of hospital treatment come under the provisions of paragraph 1459, Army Regulations. However, any soldier, sailor, or marine who has been honorably discharged since October 6, 1917, for disability incurred in line of duty, and whose present condition is a reactivation of that disability or is consequent upon it, is entitled to hospital or sanatorium care under the provisions of the war-risk insurance act either in military hosptial, if there be room for him, or in local civilian institution.

(*Cir. Letter No. 311, Surgeon General's Office, October 2, 1919.*)

Quarters for Officers.

1. The following decision of the Secretary of War is announced (ind. A. G. O., October 4, 1919, 625 Misc. Div.):

The recommendation of the Surgeon General in paragraph 3 of the basic communication that commanding officers of general hospitals be authorized to arrange for the accommodation of medical officers and their families in unused portions of the hospital wherever, in the judgment of the commanding officer, such arrangement would be in the interest of the service, is approved.

2. Attention is called, in this connection, to the provisions of paragraph 1470, A. R., as amended by C. A. R. 85, February 20, 1919.

(*Cir. Letter No. 319, Surgeon General's Office, October 7, 1919.*)

Russet Shoes.

Attention is invited to the following memorandum from the Director of Purchase, Storage and Traffic:

APRIL 7, 1919.

1. The issue of russet shoes to members of the Hospital Corps on duty at base and general hospitals is approved.

2. The stocks of these shoes are low and in some cases certain sizes are exhausted. Therefore it will be necessary to issue in the majority of cases reclaimed shoes. Zone supply officers have been directed to fill requisitions as far as possible.

(Signed) GEO. W. BURR,
Major General, Assistant Chief of Staff,
Director of Purchase, Storage and Traffic.

(*Cir. Letter No. 181, Surgeon General's Office, April 19, 1919.*)

Policy Re Protracted Hospital Treatment for Military Personnel.

1. The following is published for the information and guidance of all concerned:

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
Washington, November 7, 1919,

Memorandum for the Surgeon General:
Subject: Policy re protracted hospital treatment for military personnel.

1. Relative to the recommendations made in paragraph 4 of the memorandum for the Personnel Branch, Operations Division, from the Office of the Surgeon General, dated October 27, 1919, you are informed that the following policy is announced:

(1) That all disabled military personnel, except officers of the permanent Army and special surgical cases, shall be granted discharge six months after admission to a hospital in the United States for definitive treatment, if discharge is desired and applied for by the individual in writing.

(2) That all disabled military personnel, except officers of the permanent Army and those requiring multiple operations or special surgical treatment, or suffering from mental diseases, shall be discharged one year after admission to a hospital in this country after having been carried on sick report for definitive treatment for the same period, provided individuals too sick to be removed from hospital without prejudice to their life or recovery or who, upon the question of discharge being submitted to them in writting, certify that they can not provide for the necessary care and attention for themselves shall be retained until provisions for their care and maintenance is made by the War Risk Insurance Bureau, Soldiers' Home, or National Home for Disabled Volunteer Soldiers; provided, further, that nothing herein contained shall be deemed to rescind the provisions of Circular No. 188, W. D., 1918, authorizing discharge at any time of the disabled who have been cured or have attained maximum restoration, or those who furnish guarantees that specialized treatment will be continued as long as necessary.

2. As the above policy will not be published as a War Department circular, you are requested to take steps insuring the proper compliance by all concerned.

(*Cir. Letter No. 345, Surgeon General's Office, November 10, 1919.*)

Reports of Payment of Enlisted Men.

1. The following communication from The Adjutant General of the Army under date of November 14, 1919, is quoted for the information and guidance of all concerned:

The instructions contained in letter (copy attached) from this office of August 27 on the subject mentioned above are amended to read as follows:

It is extremely important that prompt payment be made to officers and enlisted men in your command. Pay is due on the last day of each month and payment should be made on, or soon thereafter, as possible. Careful preparation of pay rolls before submission to the disbursing officer is absolutely essential to the prompt payment of the enlisted personnel, and action should be taken by you to insure such preparation. The date of the completion of payments at stations, other than divisional camps, cantonments, and independent stations, within the limits of a department will be reported to the department commander, who will submit a written report on the 10th of each month direct to The Adjutant General, Washington, D. C.; commanding officers of divisional camps, cantonments, and independent stations will submit their reports in writing on the 10th of each month direct to the The Adjutant General, Washington, D. C., giving the date of completion of payments of all troops under their command. If any stations or organizations or a great number of enlisted patients in the hospital have not been paid for the preceding month by the 10th of the month (date of report), a supplementary report will be furnished The Adjutant General, Washington, D. C., and the reason for such nonpayment will be specifically stated.

These instructions supersede all prior instructions regarding reports as to prompt payment of troops and same should be strictly observed.

AUGUST 27, 1919.

242.01 (Miscel. Div.)
From: The Adjutant General of the Army.
To: All department and camp commanders, and commanding officers of all excepted places and bureau chiefs.
Subject: Reports of payment of enlisted men.

1. It is extremely important that prompt payments be made to officers and enlisted men in your command. Pay is due on the last day of each month, and payment should be made on, or as soon thereafter, as possible. The date of completion of payment of your command will be stated in a written report on the 10th of each month, direct to the Director of Finance, and if any of the organizations in your command, or if a great number of enlisted patients in the hospital have not been paid for the preceding month by the 10th of the month (date of report), the reason for such nonpayment must be specifically stated in order that corrective measures may be promptly applied.

2. These instructions supersede all prior instructions regarding reports as to prompt payment of troops, and same should be strictly observed.

3. You will notify all within your jurisdiction.

By order of the Secretary of War:

H. L. FINLEY, *Adjutant General.*

(*Cir. Letter No. 347, Surgeon General's Office, November 17, 1919.*)

Discharge of Cases under Provisions of Circular Letter No.345, S. G. O., November 10, 1919.

1. When military personnel is to be discharged from the service at the request of the individual after six months' treatment, under the provisions of Circular Letter 345, S. G. O., November 10, 1919, the commanding officers of hospitals will not require from patients, or from their relatives or friends, any letters, certificates, affidavits, or other documents releasing the War Department from further responsibility for the care of the patient. Neither will they require documents establishing the ability of the patient, or his relatives or friends, to furnish specialized care in civil life. The signed statement of the individual that he desires to be discharged from the military service, as provided for in subparagraph (1), paragraph 1, Circular Letter No 345, is the only paper in this connection that need be filed with the records of the individual who is to be discharged.

2. The above directions do not apply in the case of individuals who desire discharge, under the provisions of paragraph 1a, Circular No. 188, W. D., 1918, prior to the completion of a period of six months' care in a hospital in the United States which gives definitive treatment.

(*Cir. Letter No. 354, Surgeon General's Office, November 21, 1919.*)

Amendment to Circular Letter No. 345.

1. In connection with Circular Letter No. 345, S. G. O., 1919, the following is published for the information of all concerned:

DECEMBER 10, 1919.

From: The Surgeon General of the Army.
To: The Adjutant General of the Army, Washington, D. C.
Subject: Discharge of disabled military personnel.

1. With reference to the discharge of disabled military personnel under the provisions of paragraph 2, Circular Letter No. 345, November 10, 1919, S. G. O., authority is requested to instruct commanding officers of hospitals that individuals, on the completion of 12 months' definitive treatment, who have active lesions, are making satisfactory progress, and who, in the opinion of the commanding officer of the hospital, will fully recover within a reasonable length of time, may, if they so desire, be continued under treatment in their present military status,

(Sgd.) M. W. IRELAND,
Surgeon General, U. S. Army.

220.81 Enl.
War Department, A. G. O., December 13, 1919.
To the Surgeon General, approved.

By order of the Secretary of War:

(Sgd.) F. W. LEWIS,
Adjutant General.

(*Cir. Letter No. 367, Surgeon General's Office, December 16, 1919.*)

Hospital Treatment for Ex-Service Men.

1. The following information has been released for publication by the service and information branch of the office of the Secretary of War. It is requested that you give it the widest publication among the patients at your hospital.

Any ex-service man who needs medical or surgical treatment because of illness or injury contracted in the Army or Navy can hereinafter enter an Army hospital, Public Health Service hospital, or local civilian institution or sanitorium and have all his expenses paid by the Government. Few soldiers or sailors seem to be aware of this privilege, which is theirs for the asking, and to-day the War Department instructed the entire personnel of the Office of the Assistant to the Secretary of War, in charge of soldier employment and welfare work, to bring this to the attention of all such men.

Lieut. Col. Mathew C. Smith, of the General Staff, and head of the bureau, has issued a bulletin for nation-wide distribution, which says:

"Any discharged service man who is in need of medical treatment and feels that his illness is due to wounds or other disabilities received or aggravated while in service should at once see the nearest Army hospital or local representative of the United States Public Health Service for an examination. Addresses may be ascertained from the postmaster. The American Red Cross representative and State or municipal health officer also are able to advise service men about their cases and should be consulted.

"If discharge or other papers showing the disability was existing at the time of separation from service are available, they should be taken along, as they will be of help in making a decision on the case. However, if those papers are not available the man should not hesitate to apply. Such an applicant will be immediately placed under treatment pending the receipt of the necessary papers.

"If there is no representative of the Health Service in the ex-soldier's home town and no Army hospital at hand, and it is possible for him to travel, such traveling expenses, hospital expenses, and wages lost while undergoing examination will be paid by the Government, should it be decided that treatment is necessary.

"On the other hand, if the physical condition of the man makes it impossible for him to travel, he will be examined and treated at his home. In special cases where it is found that a change of climate will be beneficial, patients will be sent to specially designated hospitals."

(*Cir. Memo. from the Surgeon General, December 23, 1919.*)

Annual Report.

1. The Surgeon General desires a report of the work done at your hospital up to and including December 31, 1917.

2. It is desired that this report shall be succinct and that unnecessary detail and time shall not be used in rendering it.

(*Cir. Letter from the Surgeon General, February (—), 1918.*)

Report of Beds.

1. That this office may be informed as to the number and location of beds available for patients, the Surgeon General directs that you submit a daily report, by telegraph (night letter), beginning April 1, 1918.

2. This report will contain the following data:

	Occupied.	Empty.
1. Medical beds		
2. Surgical beds		
3. Isolation beds		
4. Psychiatric beds		
5. Officers' beds		

3. To secure uniformity the telegram will be submitted in the following form:

SURGEON GENERAL ARMY,
Washington.

Hospital division: Medical, occupied, five hundred; empty, two hundred. Surgical, occupied, two hunderd; empty, fifty. Isolation, occupied, one hundred fifty; empty, twenty. Psychiatric, occupied, ten; empty, eleven. Officers', occupied, five; empty, twenty.

SMITH.

4. Reports of bed capacity now being rendered in accordance with instructions from this office will be omitted after March 31, 1918.

(*Cir. Letter from the Surgeon General, March 22, 1918.*)

Report of Beds.

1. Referring to letter this office dated March 20, 1918, calling for a daily report of "available beds," you are directed in the future to submit same weekly. It will be mailed on Wednesday and the totals will agree with your telegraphic report submitted same day. This report will not be made in duplicate. A supply of blank forms is inclosed herewith.

(*Cir. Letter from the Surgeon General, May 16, 1918.*)

Report of Beds.

1. A good deal of confusion seems to exist at a great many camps in regard to just what should be reported as the proper bed capacity of the base hospitals. Innumerable letters have been written on the subject and instructions given and still there is a wide discrepancy between two hospitals supposedly alike and with about the same personnel.

2. It is thought that many beds now occupied by the personnel of base hospital units designated for overseas service and mobilized at some of the base hospitals are shown as not available,

while in reality these beds, temporarily occupied, would be used for sick should the emergency arise. On the other hand, beds occupied by medical officers, nurses, and enlisted men of the permanent personnel in ward buildings for whom no other accommodations are available should not be counted. Likewise, beds on porches can hardly be figured in the normal capacity.

3. All previous instructions relating to reports on bed capacity are hereby canceled.

4. It is directed that you wire this office on Saturday of each week, prior to 12 o'clock noon, the following information, commencing July 10, 1918:

(*a*) Beds in base hospital available for the care of sick.

(*b*) Beds in temporary buildings, tents, barracks, etc., which are under the jurisdiction of the commanding officer of the base hospital, available for the care of sick.

(*c*) Beds on porches available for the care of sick.

(*d*) Beds occupied by patients.

(*e*) Beds to be placed in buildings now under construction.

(*f*) Per cent complete (buildings under E).

(*g*) Greatest number of patients you can accommodate in case of emergency.

As a matter of convenience, it is directed that telegram be sent in the following form:

SURGEON GENERAL ARMY,
Washington, D. C.
Attention Hospital Division.

A, eleven hundred; B, two hundred; C, fifty; D, eight hundred; E, thirty; F, two; G, fourteen hundred.

JONES.

(*Cir. Letter from the Surgeon General, July 3, 1918.*)

Bed Report.

1. The Surgeon General directs that you wire this office on Wednesday of each week, prior to 12 o'clock noon, the following information:

(*a*) Beds in general hospital available for the care of sick.

(*b*) Beds in temporary buildings, tents, barracks, etc., which are under the jurisdiction of the commanding officer of the general hospital, available for the care of sick.

(*c*) Beds on porches available for the care of sick.

(*d*) Beds occupied by patients.

(*e*) Beds to be placed in buildings now under construction.

(*f*) Per cent complete (buildings under E).

(*g*) Greatest number of patients you can accommodate in case of emergency.

As a matter of convenience, it is directed that telegram be sent in the following form:

SURGEON GENERAL ARMY,
Washington, D. C.
Attention Hospital Division.

A, eleven hundred; B, two hundred; C, fifty; D, eight hundred; E, thirty; F, two; G, fourteen hundred.

2. This is in addition to daily report of beds (letter this office, March 22, 1918).

(*Cir. Letter from the Surgeon General, July 18, 1918.*)

Report of Beds.

1. Referring to letter this office dated July 3, 1918, "Report of beds," there is being sent you herewith a copy of the weekly bed report, which is compiled from the weekly telegrams. Explanation of the report follows:

The "standard capacity" is the bed capacity of your hospital, as figured by the construction branch, Hospital Division, S. G. O., on a basis of 800 cubic feet per patient. The capacity of the different classes of wards is:

	Beds.
Plan C, officers' ward (2 extensions, 1 for mess)	35
Plan K, 1 or 3 general wards	34
Plan K, 5 convalescent wards	60
Plan K, 8 convalescent wards	56
Plan K, 19 prison wards	32
Plan K, 20 general wards	32
Plan K, 25 prison wards	30
Plan M, 1 or 2 isolation wards	28
Plan L, 1 or 2 general wards	72
Plan R, 2 or 3 psychiatric wards	19

The "Permanent hospital beds reported" is the information furnished under letter A.

The "Temporary beds not part of hospital, etc.," includes the beds reported under letters B and C.

The "Occupied beds" is the information furnished under D.

In the last two columns, "Additional capacity authorized by construction and leases," is the information furnished under E and F.

The data called for under G are for the information of this office.

2. Discrepancies still appear in many instances, and it is directed that if the figures on the report do not coincide with the status of bed capacity of your hospital, a reply be made by indorsement hereon, with proper explanatory remarks.

(*Cir. Letter from the Surgeon General, September 11, 1918.*)

Report of Hospitals for Year 1918.

1. A report of the work done in the hospital under your command for the calendar year 1918 is desired. It should be comprehensive, but brief and concise. It should cover the activities of the various special branches as well as the general medical and surgical work in the hospital. Statistical tables and other tabulations are not necessary. Special mention should be made of epidemic diseases and the method of handling diseases of this character in the hospitals.

2. The report should be forwarded as promptly as practical after the close of the calendar year to the Office of the Surgeon General, attention Medical Record Division.

(*Cir. Letter from the Surgeon General, November 14, 1918.*)

Report of Patients in Hospital Two Months or Longer.

1. Hereafter the reports to this office on patients in hospital 60 days or longer must show whether the disability was incurred in line of duty or not in line of duty.

(*Cir. Letter from the Surgeon General, December 7, 1918.*)

Daily Report of Available Beds.

1. Commencing December 27, 1918, the daily and weekly telegraphic bed reports required by letters, this office, dated March 22 and July 18, 1918, will be discontinued in their present form and the following substituted:

(*a*) Number of beds occupied by patients.
(*b*) Number of beds vacant for patients.

This information will be furnished daily by wire (night letter) and the telegram will be submitted in the following form:

SURGEON GENERAL ARMY,
Washington, D. C.:

Hospital division, occupied, five hundred; vacant, six hundred.

SMITH.

(*Cir. Letter from the Surgeon General, December 20, 1918.*)

Daily Report of Available Beds.

1. The daily and weekly telegraphic bed reports will be discontinued in their present form, and the following substituted:

(*a*) Number of beds occupied by patients.
(*b*) Number of beds vacant for patients.

This information will be furnished daily by wire (night letter) and the telegram will be submitted in the following form:

SURGEON GENERAL ARMY,
Washington, D. C.:

Hospital division, occupied, five hundred; vacant, six hundred.

SMITH.

(*Cir. Letter No. 8, Surgeon General's Office, January 3, 1919.*)

Report of Patients in Hospital Two Months or Longer.

1. Hereafter the reports to this office on patients in hospital two months or longer will show, in addition to the other information previously indicated, the home address of the soldier.

(*Cir. Letter No. 20, Surgeon General's Office, January 10, 1919.*)

Reporting Arrival of Patients.

1. To enable this office to keep an accurate check on patients being received by transfer at your hospital from other hospitals, it is directed that this office be notified by wire, attention Hospital Division, immediately upon their arrival, stating the number of patients received and from what hospital transferred.

2. Telegrams will be submitted in the following form:

One hundred patients received from Debarkation Hospital 2, Hoboken; twenty-five patients received from general hospital, Colonia.

3. It is further directed that you submit by letter a list giving data called for in paragraph 1 of all patients received at your hospital for the period from December 1, 1918, to date of receipt of this communication.

4. It is absolutely essential that this information be furnished promptly in order that this office may have a complete check on the beds available for sick and wounded returning from overseas. (*Cir. Letter No. 21, Surgeon General's Office, January 10, 1919.*)

Semimonthly Report of All Overseas Cases.

1. It is imperative that this office have a semimonthly report of the overseas cases.

2. Inclosed is an outline which should be followed by the chief of surgical service in preparing this report.

3. This report will be sent as near the 1st and 15th of each month as possible, attention, Division of Surgery.

BASE HOSPITAL............. DATE.............

	Total cases in hospital.	Entered since last report.	Discharged since last report.	Transferred since last report.
Overseas cases				
Plastic and oral:				
Cases in which healing has or will occur without further operation and with satisfactory function and appearance				
Cases that will require further surgical or dental operation				
Brain and skull:				
Cases in which healing has occurred or will occur without further operation and without defect, etc.				
Cases that will require further operation, for plastics, defect, abscess, etc.				
Peripheral nerves:				
Cases in which healing has occurred or will occur without further operation and with satisfactory function of the extremity				
Cases of the above requiring prolonged massage, electricity, baths, etc., but not operation				
Cases that will require peripheral nerve or orthopedic operation				
Fractures:				
Cases in which healing has occurred or will occur without further operation and with satisfactory function of the extremity				
Cases which will require operation for osteomyelitis				
Cases which will require operation for nonunion or malunion				
Osteomyelitis and bone sinuses:				
Cases in which healing has occurred or will occur without further operation and with satisfactory functional results				
Cases which will require operation (curetting, sequestrectomy, etc.)				
Unhealed wounds of soft parts in general:				
Cases in which healing has occurred or will occur without further operation and with satisfactory function and appearance				
Cases that will require further surgical or dental operation (plastic repair, suture, etc.)				
Abdominal wounds:				
Cases in which healing has occurred or will occur without further operation				
Cases that will require further operation for adhesions, fistula, etc.				
Thoracic wounds:				
Cases in which healing has occurred or will occur without further operation and with satisfactory function				
Cases of the above requiring operation (sinus, cavity, etc.)				
Amputation, fingers, toes, requiring further operation				
Cases blood vessel injury requiring further operation				

NOTE.—In the oral-plastic group, cases with ugly, distorting, or depressed scars, malfibrous or nonunion, perforations on the external surface or the palate or antrum, delayed healing or union, salivary fistula, discharging fistula in the mouth or externally, induration in or about the floor of the mouth, deformities of the ear or nose, or any interference with function, including free opening of the mouth, are to be included with those reported as needing further surgical or dental operation.

Oral-plastic jaw cases should be examined jointly by surgeon and dentist; neurological cases jointly by surgeon and neurologist; stiff joints jointly by surgeon, orthopedist, and physiotherapist.

(*Cir. Letter No. 24, Surgeon General's Office, January 11, 1919.*)

Report of Average Length of Stay in Hospitals of Overseas Cases.

1. Information is requested as to the average length of stay in hospitals of overseas cases only, excluding all cases of amputation of the upper or lower extremities, insane, peripheral nerve injuries, and paralysis.

2. This report will be submitted to this office as promptly as possible, attention Hospital Division.

(*Cir. Letter No. 28, Surgeon General's Office, January 14, 1919.*)

Weekly Report from Convalescent Center.

1. It is requested that a report for each week ending Saturday, 12 o'clock noon, as per inclosed form, be sent to this office, attention Division of Physical Reconstruction.

2. Your attention is invited to subheading (nature of disabilities and classification of each). It is important that this office be kept informed as to the sources and disposition of those cases for whom special hospitals are designated.

CONVALESCENT CENTER, CAMP............

Report of week ending Saturday, ...

Number of convalescent soldiers received for week ending ....
Number of convalescent soldiers discharged during week ending ....
Number of convalescent soldiers transferred to base hospital, week ending ....
Number of convalescent soldiers transferred to other camps, week ending ....
Total number convalescent soldiers remaining ....
Oversea........................ ....
Domestic........................ ....
Sources of convalescent soldiers:
(1) Number from other camp base hospitals........................ ....
(2) Number from general hospitals........................ ....
(3) Number from ports of debarkation........................ ....
(4) Number from other sources (as local camp organization)........................ ....
Number of soldiers in center longer than 6 weeks........................ ....
Nature of disabilities and classification of each:
1. Amputations:
Sources........................ ....
Disposition........................ ....
Number not supplied or properly fitted with temporary artificial extremity, and source........................ ....
2. Other surgical and orthopedic conditions........................ ....
3. Peripheral nerve injuries and paralyses:
Sources........................ ....
Disposition........................ ....
4. Deafness:
Number that have not been taught lip reading........................ ....
Sources........................ ....
Disposition........................ ....
5. Medical conditions:
(1) Convalescents........................ ....
(2) Heart cases........................ ....
(3) Gas cases........................ ....
(4) Other medical conditions........................ ....
6. Miscellaneous:
Number needing artificial eye, etc........................ ....

(*Cir. Letter No. 45, Surgeon General's Office, January 21, 1919.*)

Patients In Hospitals, March 31, 1919.

1. In order to obtain accurate statistics of the number of oversea and domestic patients now in hospitals in the United States, it is directed that you report by wire, attention Hospital Division, not later than April 2, 1919, the total number of oversea cases and the total number of domestic cases in your hospital on March 31, 1919.

2. It is essential that this report be rendered promptly.

(*Cir. Letter No. 136, Surgeon General's Office, March 12, 1919.*)

Report of Average Length of Stay in Hospitals of Overseas Cases.

1. Information is requested as to the average length of stay in hospitals of all overseas cases for that period of time covered since your last report, in conformity to the information asked for in Circular Letter No. 28, S. G. O., dated January 14, 1919.

2. It is to be noted that the report mentioned above excluded certain cases. This report covers all overseas cases.

3. This report will be submitted to this office, attention Hospital Division, promptly.

(*Cir. Letter No. 178, Surgeon General's Office, April 11, 1919.*)

Patients in Hospitals, April 30, 1919.

1. In order to obtain accurate statistics of the number of oversea and domestic patients now in hospitals in the United States, it is directed that you report by wire, attention Hospital Division, not later than May 2, 1919, the total number of oversea cases and the total number of domestic cases in your hospital on April 30, 1919.

2. It is essential that this report be rendered promptly.

(*Cir. Letter No. 172, Surgeon General's Office, April 14, 1919.*)

Discontinuance of Reports.

The following reports from hospitals, heretofore made to this office, being no longer required, will be discontinued:

1. Classification of surgical personnel.
2. Special reports by chief of head surgery service.
3. Fire protection report required by Circular Letter No. 46.
4. Operations of orthopedic service.
5. Admissions, discharges, consultations, and general report of orthopedic service.
6. Report of overseas surgical cases required by Circular Letter No. 24.

(*Cir. Letter No. 218, Surgeon General's Office, May 21, 1919.*)

Patients in Hospitals, May 31, 1919.

1. In order to obtain accurate statistics of the number of oversea and domestic patients now in hospitals in the United States, it is directed that you report by wire, attention Hospital Division, not later than June 2, 1919, the total number of oversea cases and the total number of domestic cases in your hospital on May 31, 1919.

2. It is essential that this report be rendered promptly.

(*Cir. Letter No. 222, Surgeon General's Office, May 23, 1919.*)

Patients in Hospitals, June 30, 1919.

1. In order to obtain accurate statistics of the number of oversea and domestic patients now in hospitals in the United States, it is directed that you report by wire, attention Hospital Division, not later than July 2, 1919, the total number of oversea cases and the total number of domestic cases in your hospital on June 30, 1919.

2. It is essential that this report be rendered promptly.

(*Cir. Letter No. 242, Surgeon General's Office, June 20, 1919.*)

Patients in Hospitals, July 31, 1919.

1. In order to obtain accurate statistics of the number of oversea and domestic patients now in hospitals in the United States, it is directed that you report by wire, attention Hospital Division, not later than August 2, 1919, the total number of oversea cases and the total number of domestic cases in your hospital on July 31, 1919.

2. It is essential that this report be rendered promptly.

(*Cir. Letter No. 261, Surgeon General's Office, July 17, 1919.*)

Telegraphic Report of July 13, 1919.

1. The telegraphic report or circular sent out from Room 360, State, War, and Navy Building, July 13, 1919, in reference to educational and vocational training, has no bearing whatever upon the reconstruction work of patients in the hospital. This refers entirely to the program of education of the detachment men, and should not be confused with our work.

(*Cir. Letter No. 273, Surgeon General's Office, August 1, 1919.*)

Patients in Hospitals, August 31, 1919.

1. In order to obtain accurate statistics of the number of patients in hospitals in the United States on August 31, 1919, it is directed that you report by wire, not later than September 2, 1919, the following information:

(*a*) Total number of oversea cases. (Only cases whose illness or injury originated overseas, and who were transferred to the United States on sick report, will be shown under this heading.)

(*b*) Total number of domestic cases. (Cases admitted from command or camp.)

2. It is essential that this report be rendered promptly, and that the wire be sent in the following form:

SURGEON GENERAL, ARMY,
Washington, D. C.

Attention Hospital Division, overseas, ten; domestic, fifty.

SMITH.

(*Cir. Letter No. 281, Surgeon General's Office, August 13, 1919.*)

Turnover of Patients.

1. Certain information in relation to the turnover of patients in your hospital is desired by this office. In the column on the inclosed form, "Number of patients," the figures should show the number of patients remaining in hospital at the end of each week as indicated.

2. The other columns will show the totals for the entire week, the captions being self-explanatory.

3. This information is desired immediately.

U. S. A. GENERAL HOSPITAL No.............

....
(Date.)

From: The commanding officer, General Hospital No. ——.
To: The Surgeon General (attention Hospital Division).
Subject: Report.

Week of—	Number of patients.	Admitted.	To duty.	Died.	Discharged on S. C. D.	Transferred.	Otherwise disposed of.
June 27							
July 4							
July 11							
July 18							
July 25							
Aug. 1							
Aug. 8							
Aug. 15							
Aug. 22							
Aug. 29							

....
Commanding.

(*Cir. Letter No. 292, Surgeon General's Office, August 29, 1919.*)

Daily Report of Available Beds and Arrival of Patients.

1. The daily telegraphic reports of the bed situation and of the arrival of patients will be discontinued in their present forms and the following consolidated weekly report substituted:

(*a*) Number of beds occupied by patients.

(*b*) Number of beds vacant for patients.

(*c*) Number of patients arriving at your hospital during the week from other hospitals.

2. This information will be furnished by wire on Friday of each week before 12 o'clock noon, and will be submitted in the following form:

SURGEON GENERAL, ARMY,
Washington, D. C.

Hospital Division, occupied, eight hundred; vacant, three hundred; patients received, twenty-five from Merritt, ten from McHenry.

JACKSON.

3. Circular Letter No. 8, January 3, 1919, and Circular Letter No. 21, January 10, 1919, are hereby rescinded.

(*Cir. Letter No. 295, Surgeon General's Office, September 3, 1919.*)

War Risk Bureau Patients in Army Hospitals.

1. The following instructions of the Secretary of War respecting hospital charges for the patients designated above are communicated for your guidance:

> You will cause to be furnished itemized statements to the War Risk Bureau, attention Colonel Rucker, under such rules and regulations as you deem proper, covering each such man admitted to the Army hospitals from date of entry to date of release therefrom up to and including June 30, 1919, and like statements for each such man admitted since June 30, 1919, to the Public Health Service, attention Dr. Stimpson.

2. The Secretary also requires from the Surgeon General a periodical statement showing the magnitude of the work done in Army hospitals toward the care of discharged soldiers who are beneficiaries of the War Risk Bureau. In order that this information may be submitted promptly, you will report to this office, attention Hospital Division, on the last day of each month, the number of such patients admitted during the month, discharged or otherwise disposed of during the month, and remaining in hospital on the last day of the month. It is assumed that all such patients have been admitted to your hospital on the request of an agent or representative of the War Risk Insurance Bureau or the Public Health Service. All dispositions will be reported under appropriate headings as discharged, cured, left hospital, etc. The first report will be submitted at once as of August 31, 1919.

(*Cir. Letter No. 304, Surgeon General's Office, September 18, 1919.*)

Patients in Hospitals, September 30, 1919.

1. In order to obtain accurate statistics of the number of patients in hospitals in the United States on September 30, 1919, it is directed that you report by wire, not later than October 2, 1919, the following information:

(*a*) Total number of oversea cases. (Only cases whose illness or injury originated overseas, and who were transferred to the United States on sick report, will be shown under this heading.)

(*b*) Total number of domestic cases. (Cases admitted from command or camp.)

2. It is essential that this report be rendered promptly, and that the wire be sent in the following form:

SURGEON GENERAL, ARMY,
Washington, D. C.:

Attention Hospital Division, overseas, ten; domestic, fifty.

SMITH.

(*Cir. Letter No. 305, Surgeon General's Office, September 18, 1919.*)

Patient Officers.

1. To enable this office to furnish certain data to the General Staff, you will report to this office by telegram, on the morning of October 31, 1919, the number of patient officers at your hospital on that date. The report will show separately the number of officers of the regular service and the number of temporary officers.

2. Department surgeons will furnish the report for the stations under their jurisdiction.

(*Cir. Letter No. 314, Surgeon General's Office, October 6, 1919.*)

Patients in Hospitals, October 31, 1919.

1. In order to obtain accurate statistics of the number of patients in hospitals in the United States on October 31, 1919, it is directed that you report by wire, not later than November 2, 1919, the following information:

(*a*) Total number of oversea cases. (Only cases whose illness or injury originated overseas, and who were transferred to the United States on sick report, will be shown under this heading.)

(*b*) Total number of domestic cases. (Cases admitted from command or camp.)

2. It is essential that this report be rendered promptly, and that the wire be sent in the following form:

SURGEON GENERAL, ARMY,
Washington, D. C.:

Overseas cases, ten; domestic, fifty.

SMITH.

(*Cir. Letter No. 328, Surgeon General's Office, October 15, 1919.*)

Officers Sick in Hospital.

1. To enable this office to furnish certain information required by the Operations Division of the General Staff, you will submit to this office, as early as practicable, a report showing the names, ranks, and organizations of all officers, both regular and temporary, now patients in hospital who will be physically fit for full field duty within three months after October 31, 1919.

2. This report will also show the approximate dates when these officers may be expected to be physically fit for full field duty.

(*Cir. Letter No. 338, Surgeon General's Office, October 29, 1919.*)

Patients in Hospitals, November 30, 1919.

1. In order to obtain accurate statistics of the number of patients in hospitals in the United States on November 30, 1919, it is directed that you report by wire, not later than December 2, 1919, the following information:

(*a*) Total number of oversea cases. (Only cases whose illness or injury originated overseas, and who were transferred to the United States on sick report, will be shown under this heading.)

(*b*) Total number of domestic cases. (Cases admitted from command or camp.)

2. It is essential that this report be rendered promptly, and that the wire be sent in the following form:

SURGEON GENERAL, ARMY,
Washington, D. C.:

Overseas cases, ten; domestic, fifty.

SMITH.

(*Cir. Letter No. 351, Surgeon General's Office, November 17, 1919.*)

Weekly Telegraphic Report of Sick.

1. In compliance with Circular No. 493, War Department, 1919, the weekly telegraphic report of sick from your station will, in future, be forwarded by special delivery mail. In order that the arrival of these reports in this office may be sufficiently prompt, it is imperative that they be placed in the mail on Friday night of each week.

2. In the event of an unusual or alarming occurrence of infectious disease, you may, at your discretion, make the report by telegraph.

(*Cir. Letter No. 350, Surgeon General's Office, November 18, 1919.*)

Additional Data Called for in Monthly Sanitary Report.

1. Circular Letter No. 355, S. G. O., November 24, 1919, is supplemented as follows:

It is desired that the following information be embodied in paragraph 1 of monthly sanitary report, Form 50, Medical Department.

(*a*) Normal bed capacity for patients in permanent hospital, including officers' wards, women's wards, and isolation wards.

(*b*) Number and normal bed capacity of temporary buildings, if any, constructed during the World War, this to include wards, barracks, nurses' quarters, and officers' quarters, etc.

(*c*) Condition of temporary hospital buildings and uses to which they are being put on date of report.

(*d*) Number of beds, if any, available for treatment of women patients.

2. This information should be entered under lettered subheads, as indicated above.

(*Cir. Letter No. 362, Surgeon General's Office, December 5, 1919.*)

Patient Officers.

1. To enable this office to furnish the General Staff required information, and for compilation of data by the Surgeon General, report will be submitted to this office as of date December 15, 1919, showing full name, rank, and organization of all officers, both regular and temporary, now patients in hospital or on sick leave. This report must be complete and accurate in order that all officers sick on that date (December 15) may be carded for record in the War Department.

2. Commanding officers of all general hospitals, all camp surgeons, and all surgeons of independent posts and stations will furnish this report, and also make supplementary reports on Monday of each week showing all changes in the status of officers to and from sick in hospital or sick

leave, with dates of such changes. Department surgeons will render the above reports for post hospitals and stations under control of the department commander.

3. It is imperative that the report as of date December 15, 1919, be rendered promptly and accurately.

(*Cir. Letter No. 365, Surgeon General's Office, December 5, 1919.*)

Reports of Officer Patients.

1. In rendering reports in compliance with Circular No. 497, W. D., 1919, prior to reporting officers as having completed treatment in hospital and being available for discharge or assignment to duty, you will cause to be made a thorough physical examination such as is contemplated prior to separation of an officer or enlisted man from military service.

2. Several instances have occurred of officers sick in hospital, having recovered from surgical operations and having been reported as fit for duty or discharge and as having no disability when discharged, who, when given a thorough physical examination as contemplated by the instructions directing such examination prior to discharge, have been found not fit for duty or discharge.

3. In addition to the information requested in the above-mentioned circular, the diagnosis and line of duty will also be stated.

(*Cir. Letter No. 368, Surgeon General's Office, December 22, 1919.*)

Additional Information to be Included in Weekly Report of Sick.

1. The following additional information will be included in the weekly report of sick (Form 86, Medical Department).

(*a.*) Number of enlisted men in corps or organization other than the Medical Department, specifying the number in each.

(*b.*) Number of civilian employees, Medical Department.

(*c.*) Number of civilian employees in other departments, specifying the number in each.

2. All requests for authority to increase the number of civilian employees of any department will be forwarded through this office.

3. A weekly report of sick containing the additional information requested in paragraph 1 would read as follows:

A, twenty-three two sixty-four; B hospital, four sixty-two; quarters, one twenty-nine; injuries, sixty-nine; pneumonia, nine; malaria, eight; venereal, one forty-eight; measles, one fourteen; meningitis, two; others, two forty-one. C hospital, two forty-seven; quarters, one eighty-six; injuries, eighty-six; pneumonia, seven; malaria, nine; venereal, one sixty-two; measles, one nineteen; meningitis, one; others, forty-nine; died, pneumonia, one; carcinoma of liver, one; F, eight; G, five seventy-eight; H hospital, two ninety-four; quarters, one forty-two; injuries, eighty-seven; pneumonia, eight; malaria, nine; venereal, one sixty-eight; measles, one twenty-four; meningitis, two; others, thirty-eight; vacant beds, sixty-seven; medical officers, one fifteen; nurses, sixty-two; enlisted Medical, regulars, two thirty; emergency, ninety-six; *Quartermaster, seventeen; Motor Transport, eight; Signal, two; civilian employees, Medical, nine; Quartermaster, twelve; Motor Transport, eight.*

(*Cir. Letter No. 369, Surgeon General's Office, December 27, 1919.*)

Additional Information to be Included in Weekly Report of Sick.

1. In rendering the weekly report of sick on Friday night of each week it is desired that you include the number of civilian employees, Medical Department, on duty at your station.

2. A weekly report of sick containing the additional information requested in paragraph 1 would read as follows:

A, twenty-three two sixty-four; B hospital, four sixty-two; quarters, one twenty-nine; injuries, sixty-nine; pneumonia, nine; malaria, eight; venereal, one forty-eight; measles, one fourteen; meningitis, two; others, two forty-one; C hospital, two forty-seven; quarters, one eighty-six; injuries, eighty-six; pneumonia, seven; malaria, nine; venereal, one sixty-two; measles, one nineteen; meningitis, one; others, forty-nine; died, pneumonia, one; carcinoma of liver, one; F, eight; G, five seventy-eight; H hospital, two ninety-four; quarters, one forty-two; injuries, eighty-seven; pneumonia, eight; malaria, nine; venereal, one sixty-eight; measles, one twenty-four; meningitis, two; others, thirty-eight; vacant beds, sixty-seven; medical officers, one fifteen; nurses, sixty-two; enlisted emergency, fifty-one; regulars, thirty-eight; *civilians, Medical Department, eighteen.*

(*Cir. Letter No. 370, Surgeon General's Office, December 29, 1919.*)

Bed Capacity.

1. It is directed that this office be informed as to the bed capacity of the hospital under your jurisdiction as follows:

In Permanent Buildings:
- (*a*) Officers.
- (*b*) Enlisted men.
- (*c*) Isolation purposes.

In Temporary Buildings:
- (*a*) Officers.
- (*b*) Enlisted men.
- (*c*) Isolation purposes.

2. Information is also desired as to the number of beds to which your hospital can be expanded in emergency.

3. The above information will be furnished as expeditiously as possible.

(*Cir. Letter No. 372, Surgeon General's Office, December 31, 1919.*)

Telephone Service for Base Hospitals.

1. The following is furnished for your information:

For administrative purposes there shall be established by the Signal Corps at each base hospital, in addition to the telephone service required for administrative purposes in the cantonments, a telephone system consisting of a switchboard and not exceeding 50 telephones. These telephones are to be installed in the administrative buildings and various wards, the locations to be chosen by the officer in charge of the hospital.

The telephone switchboard at the base hospital will be connected to the main telephone switchboard of the cantonment by three or more trunk lines.

By authority of the Chief Signal Officer:

F. R. CURTIS,
Lieutenant Colonel, Signal Corps.

[2d ind.]

676.1 O. D.
War Department, A. G. O., March 5, 1918.
To the Chief Signal Officer.

The recommendations contained herein for providing a system of 50 telephones and three trunk lines are approved.

By order of the Secretary of War:

F. W. LEWIS, *Adjutant General.*

(*Cir. Letter from the Surgeon General, March 21, 1918.*)

Water Supply.

1. The question of water supply at the various camps and cantonments has been made the subject of various reports. Recently an officer of the Inspector General's Department reported that at one of the cantonments the water pressure at times was dangerously low for fire protection. This matter has been taken up with the Construction Division, Quartermaster General's Office, which division submits the following report:

Funds are now available and plans have been prepared for strengthening and improving the water system at this camp. Attention is again called to the fact that the water systems were not designed to deliver fire flow during periods of maximum domestic consumption, and inspections for reports upon the adequacy of the systems for fire protection should be made in accordance with section, "Quantity," paragraph (*b*), of Instructions from the Engineer Division for the Constructing Quartermaster for National Guard Camps, which reads as follows:

"(*b*) The fire-drill regulations shall make it the definite duty of certain designated individuals to shut off, as soon as fire alarm is sounded, every fixture from which water may be drawn for purposes other than fire fighting, except those necessary for cooking purposes."

The fire call should be sounded in order to see if the rules are being enforced, for in no other way can the necessary quantity of water be made available.

2. The Surgeon General directs that fire call be sounded frequently, and that the order regarding the water being shut off as soon as fire alarm is sounded be enforced.

(*Cir. Letter from the Surgeon General, July 17, 1918.*)

Transfer of Cases of Prolonged Illness.

1. Information has been received in this office that men are being discharged from the camp hospitals and from the Army who are in need of further treatment.

2. It is recognized that it is impossible to retain at the camp hospitals all patients who may require prolonged treatment or whose convalescence is likely to extend over an indefinite period.

It is, however, the policy of the Surgeon General to provide hospital treatment for soldiers until everything possible has been done to restore them to health in order that, if no longer fit for military service, they may be returned to civil life in as good condition as possible. To this end, soldiers who require further treatment should not be discharged but should be transferred to a suitable Army hospital. Recommendations for such transfer should be made to the Surgeon General, attention Hospital Division.

3. It should be understood that patients requiring only limited treatment to enable them to return to duty should not be transferred.

4. Whenever an officer or an enlisted man remains in the hospital for a period of two months or longer, you are directed to send a report to this office stating the facts in the case and the reason for the prolonged stay, with recommendations as to further disposition of the case.

5. Regulations in detail will be furnished at a later date.

(*Letter to commanding officers of all base and general hospitals, Surgeon General's Office, April 5, 1918.*)

Transfer of Patients for Physical Reconstruction.

1. Referring to your report dated .... entitled ...., you are informed that a policy stated as follows is adopted:

That hereafter no member of the military service disabled in line of duty, even though not expected to return to duty, will be discharged from service until he has attained complete recovery or as complete recovery as it is to be expected that he will attain when the nature of his disability is considered. The inauguration of this continued treatment will result, during the period of the war, in the saving to the service of a large number of efficient officers and soldiers who without it would never become able to perform duty.

Physical reconstruction may be defined as the completest form of medical and surgical treatment carried to the point where maximum functional restoration, mental and physical, has been secured. To secure this result, the use of work, mental and manual, will be required during the convalescent period. This therapeutic measure, in addition to aiding greatly in shortening the convalescent period, retains or arouses mental activities, preventing "hospitalization," and enables the patient to be returned to service or civil life with the full realization that he can work in his handicapped state, and with habits of industry much encouraged if not firmly formed.

2. Pending more definite arrangements to be made shortly, it is desired that so far as possible patients shall not hereafter be recommended for discharge on surgeon's certificate of disability until they have attained complete recovery or as complete recovery as it is to be expected they will attain when the nature of their disability is considered.

3. It is desired that whenever necessary patients be recommended for transfer to general hospitals. Pending further orders it is desired that all patients suffering from blindness, total deafness, amputations other than of the fingers and toes, and pulmonary tuberculosis be recommended for transfer. Patients suffering from pulmonary tuberculosis should be recommended for transfer when the diagnosis has been confirmed, not necessarily waiting for demonstration of tubercle bacilli. Previous instructions in pulmonary tuberculosis are modified as indicated in this paragraph. Special care will be taken that no patient will be transferred if in danger of death en route.

4. In addition to these classes, it is recommended that patients in your hospital be transferred who, in your opinion, are proper cases for treatment in a general hospital. When equally good treatment can be had at your hospital and beds are available, patients should be retained there for treatment and not transferred to general hospitals unless included in classes for which transfer is made obligatory. It is desired that you recommend as soon as possible patients now in your hospital who, in your opinion, should be transferred for further treatment.

5. Recommendations for transfer will be made by telegram addressed to the Surgeon General, and in form as indicated by the following models, copies of telegrams actually received.

Recommend transfer ten medical, sixteen tuberculosis, two insane, one neurosis, one amputation, two surgical enlisted men.

Recommend transfer four neurosis officers, four neurosis, sixteen tuberculosis, twelve insane, two amputations, two orthopedic, one deafness, two surgical, two gastrointestinal, two general medical enlisted men.

Request authority transfer twelve patients, one officer medical enlisted, one medical, one surgical, one mental, four medical, one surgical, two tuberculosis, one orthopedic, total enlisted eleven.

6. In classifying cases for the formulation of telegrams the following terms will be used:

Medical:
- Cardiovascular—
  - Functional
  - Organic.
- Pulmonary tuberculosis.
- Functional neurosis.
- Insanity.
- Nephritis.
- Gastrointestinal.
- Skin.
- Gassed.
- Other general medical.
- Convalescent.

Surgical:
- Orthopedic.
- Amputation.
- Eye, ear, nose, throat disease—Wounds.
- Wound, injury, or other surgical condition of nervous system.
- Blindness.
- Deafness.
- Speech defect.
- Severe injury, face and jaw.
- Venereal disease or sequelae.
- Surgical condition genito-urinary system.—
  - Venereal.
  - Nonvenereal.
- Other surgical conditions.
- Convalescent.

(*Letter to commanding officers, base hospitals (through the camp or division surgeons), Surgeon General's Office, May 21, 1918.*)

Transfer of Patients.

1. Several instances have occurred where patients have been transferred from one general hospital to another without authority from this office.

2. This practice will be discontinued.

(*Letter to commanding officers, general hospitals, and surgeons, ports of embarkation, Surgeon General's Office, June 4, 1918.*)

Arrival of Patients.

1. When patients are transferred to general hospitals, the commanding officer thereof will be notified by wire as to the probable time of arrival, in order that arrangements may be made for their prompt removal from train to hospital.

(*Cir. Letter, Surgeon General's Office, June 4, 1918.*)

Transfer of Mental Cases.

1. The Surgeon General directs that in future transfer of mental cases from ports of embarkation, post, base, and general hospitals in the United States be accomplished in the following manner:

When recommending the transfer of such cases, the letter or telegram will state the number of trained attendants necessary to accompany patients. War Department orders will be published for the transfer of the patients, and the commanding officer of the receiving hospital will be directed to provide the necessary attendants.

(*Cir. Letter, Surgeon General's Office, July 19, 1918.*)

Transfer of Insane Cases.

1. In transferring insane cases to hospitals (other than St. Elizabeths Hospital, Washington, D. C.) the following papers will be prepared at the station of soldier where diagnosis is made, and will accompany him until his case is finally disposed of:

(*a*) Proceedings of board of officers.
(*b*) Certificates of disability.
(*c*) Medical certificate required by the Department of Interior.
(*d*) Inventory of effects.

2. In transferring cases to St. Elizabeths Hospital, Washington, D. C., the provisions of Army Regulations will be strictly complied with.

(*Letter to commanding officers, general hospitals and all base hospitals, National Army and National Guard camps, Surgeon General's Office, July 24, 1918.*)

Transfer of Patients.

1. In recommending patients for transfer it is directed that you specify colored patients separately.

(*Letter to the commanding officers of base hospitals, general hospitals, and surgeons, ports of embarkation, Surgeon's General's Office, August 7, 1918.*)

Arrival of Patients.

1. The following extract of a letter from this office, dated May 22, 1918, is published for the information of all concerned:

> To enable this office to keep a check on patients being transferred to your hospital from other hospitals and ports of embarkation, it is directed that this office be promptly notified by letter of their arrival, attention Hospital Division, giving the following information:
> Number of patients received.
> From where transferred.

2. Prompt compliance is directed.

(*Letter to commanding officers all general hospitals; commanding officers, base hospitals, Fort Des Moines, Iowa; surgeon, Plattsburg Barracks, N. Y., Surgeon General's Office, August 22, 1918.*)

Arrival of Patients.

1. When patients are transferred from one hospital to another the commanding officer of the receiving hospital will be notified by wire the probable time of their arrival, in order that arrangements may be made for their removal from the train to hospital.

2. Prompt compliance is directed.

(*Cir. Letter, Surgeon General's Office, September 10, 1918.*)

Transfer of Tuberculous Patients.

1. It is directed that soldiers suffering from pulmonary tuberculosis and requiring sanatorium treatment be recommended, as far as practicable, for transfer to Army tuberculosis hospitals nearest their homes.

2. With this in view, taking into consideration the bed capacity of each hospital, and also the proportionate population, as far as practicable, each Army tuberculosis hospital will receive patients from States as follows:

U. S. Army General Hospital No. 16, New Haven, Conn.	Maine. New Hampshire. Vermont. Massachusetts. Rhode Island. Connecticut.
U. S. Army General Hospital No. 8, Otisville, N. Y. U. S. Army General Hospital No. 17, Markleton, Pa.	New York. Pennsylvania.
U. S. Army General Hospital No. 18, Waynesville, N. C. U. S. Army General Hospital No. 19, Azalea, N. C.	New Jersey. Delaware. Maryland. District of Columbia. Virginia. West Virginia. North Carolina. South Carolina. Georgia. Alabama. Florida. Tennessee. Kentucky. Ohio.
U. S. Army General Hospital No. 21, Denver, Colo.	Indiana. Michigan. Illinois. Wisconsin. Minnesota. North Dakota South Dakota Colorado. Iowa. Nebraska. Montana. Wyoming.

U. S. Army General Hospital, Fort Bayard, N. Mex.	Missouri. Kansas. Arkansas. Mississippi. Louisiana. Oklahoma. Texas. New Mexico.
U. S. Army General Hospital No. 20, Whipple Barracks, Ariz.	Washington. Oregon. Idaho. Utah. Nevada. California. Arizona.

(*Letter to the commanding officers of base hospitals, general hospitals, and surgeons ports of embarkation, Surgeon General's Office, October 8, 1918.*)

Transfer of Patients.

1. Referring to telegram this office, dated November 26, 1918, in reference to transfer of overseas cases to your hospital for further observation and treatment, I am directed by the Surgeon General to inform you that the following class of cases will be transferred for the present:

General medical cases.
General orthopedic cases, not requiring any special reconstruction treatment.
General surgical cases.
Surgical tuberculosis cases.
Venereal diseases and their sequelæ.

2. It is directed that you wire this office, attention Hospital Division, daily before 12 o'clock noon, the following information:

(*a*) The number of beds occupied by patients.
(*b*) The number of beds empty.
(*c*) The number of beds available for overseas cases.

3. It is further directed that you wire this office the arrival of patients from ports of embarkation, simply giving the number received and from what port. The surgeons, ports of embarkation, have been notified to wire you when patients leave for your hospital in order that you may make suitable provision for their reception and the transportation from train to hospital.

(*Letter to commanding officers, all base hospitals, Surgeon's General Office, November 26, 1918.*)

Transfer of Patients.

1. Information has been received that a considerable number of patients have been transferred to U. S. Army General Hospital, Fort Bayard, N. Mex., whose physical condition upon arrival at that hospital plainly indicated that they should not have been subjected to the hardships of the journey. Several of these cases were in extremely critical condition upon arrival and the prognosis in all cases was grossly unfavorable.

2. The transfer of these cases plainly indicated lack of care in selection of cases for transfer and is contrary to the requirements of Army Regulations, the Manual for the Medical Department, and the policy of this office.

3. Medical officers will not recommend the transfer of tuberculosis cases to general hospitals unless such cases are able to stand the trip without risk.

4. The instructions contained in this letter will also apply to transfers of all other diseases.

Cir. Letter, Surgeon General's Office, December 13, 1918.)

Transfer to Oversea Convalescent Detachments.

1. It is directed that when transferring oversea convalescents to oversea convalescent detachments, in compliance with Circular 90, War Department, November 25, 1918, that a nominal check list be sent in duplicate to the camp surgeon interested, giving the diagnosis, the line of duty, and any other information that may be pertinent in each case.

(*Letter to commanding officers, all base and general hospitals, and surgeons, ports of embarkation, Surgeon General's Office, December 23, 1918.*)

Transfer of Cases of Respiratory Disease.

1. In the effort to effect as speedy and complete a cure and as prompt a discharge from the service as possible, it is believed that in certain selected cases of respiratory disease the transfer of the patient to a warmer or otherwise more suitable climate would hasten recovery to such an extent as fully to justify the expense involved. This applies especially to gas cases with severe and persistent bronchial symptoms, but includes also certain cases of persistent bronchitis, of bronchiectasis, of pulmonary abscess, etc.

2. Authority to transfer such patients will be granted upon proper notification and recommendation to the Surgeon General, attention Hospital Division.

3. It should be emphasized that cases so recommended should be carefully selected, upon recommendation of Chief of the Medical Service, and should include only patients who have severe and persistent respiratory symptoms and whose recovery is likely to be sufficiently slow to warrant their transfer. This does not apply, of course, to the mild gas cases or to those without obstinate bronchial symptoms.

(*Cir. Letter No. 18, Surgeon General's Office, January 9, 1919.*)

Instructions Governing all Correspondence Concerning the Transfer of Individual Patients.

1. Recommendations for the transfer of individual patients will be made by letter, except in cases of emergency, when telegram may be used. In the letter recommending the transfer will be incorporated the following:

(1) Diagnosis of the case, with a brief history if necessary.
(2) Condition of the patient.
(3) Whether the patient can travel unattended, or the number of attendants necessary.
(4) Home of patient.
(5) Place of entry into the military service.

2. When telegrams are used, the above information will be stated as briefly as possible.

3. When letters are received from this office requesting information as to the condition of patients, they will be answered promptly, the reply containing the information called for above. When a telegram asking for information is sent from this office, the reply will be sent by wire, giving briefly and concisely the information asked for, together with any other facts which may have a bearing on the transfer of the patient.

4. All communications concerning the transfer of individual patients will be addressed to this office, attention Sanitation Division.

(*Cir. Letter No. 27, Surgeon General's Office, January 13, 1919.*)

Transfer of Cases of Amputation.

1. Attention has been called to the fact that a number of amputations, both domestic and overseas (not including fingers and toes), are occasionally sent to hospitals not designated specially to receive them and not equipped with the necessary supplies for the fitting of the provisional prostheses.

2. For your information, in case such patients with amputations are received at your hospital, the following is issued:

It is the policy of the Surgeon General's Office in reference to amputation cases, domestic and overseas (excepting fingers and toes), to concentrate them in certain general hospitals designated as amputation centers, these being:

U. S. Army General Hospital No. 3, Colonia, N. J. (leg cases only).
U. S. Army General Hospital No. 6, Fort McPherson, Ga.
U. S. Army General Hospital No. 10, Boston, Mass.
U. S. Army General Hospital No. 26, Fort Des Moines, Iowa.
U. S. Army General Hospital No. 29, Fort Snelling, Minn.
Walter Reed General Hospital, Takoma Park, D. C.
Letterman General Hospital, San Francisco, Calif.

3. All cases of amputation, other than fingers and toes, received in hospitals not designated in the list above should be recommended at once to the Surgeon General's Office, attention Hospital Division, for transfer to the general hospital designated as an amputation center nearest the patient's home.

(*Cir. Letter No. 42, Surgeon General's Office, January 21, 1919.*)

Discharge of Sick and Wounded to Convalescent Centers.

1. The attention of this office has been directed to the condition of soldiers in the convalescent centers who have been incompletely treated before discharge from base and general military hospitals.

2. Your attention is directed to Circular Letter No. 29, S. G. O., paragraph 10; to Circular Letter No. 33, S. G. O., and to Circular Letter No. 41, S. G. O. You are directed to comply with the orders embraced in the circular letters mentioned.

3. It is absolutely necessary that the commanding officers of base hospitals and the camp surgeons cooperate in the treatment of the patients and in the training of the soldiers in the convalescent centers.

(*Cir. Letter No. 50, Surgeon General's Office, January 25, 1919.*)

Disposition of Sick and Wounded from St. Louis and Vicinity.

1. The Jefferson Barracks Hospital has been placed at the disposal of the Medical Department for the care of sick and wounded belonging in St. Louis.

2. This hospital will function for the care of general medical and general surgical cases and should be added to the list for the disposition of overseas cases.

(*Cir. Letter No. 53, Surgeon General's Office, January 27, 1919.*)

Disposition of Sick and Wounded Among the Flying Personnel, Air Service, Department of Military Aeronautics.

1. Flying personnel, on arrival at ports of debarkation, will be sent to U. S. Army General Hospital No. 2, Fort McHenry, Baltimore, Md., or if already convalescent, to the Air Service depot, Garden City, Long Island; geographical distribution will be disregarded.

2. Flying personnel, as patients, arriving at general hospitals when convalescent, will be sent direct either to the military convalescent hospital, Cooperstown, N. Y., or to the Air Service depot, Garden City, Long Island. Transfer history will be sent with patient in all cases for presentation to the medical board at the Air Service depot, Garden City, Long Island, to determine their fitness for future flying service, either in the regular service or in the reserve.

(*Cir. Letter No. 57, Surgeon General's Office, January 29, 1919.*)

Disposition of Amputation Cases.

1. Much difficulty has been encountered because of the fact that many amputation cases have been transferred from the ports to hospitals not designated for the receipt of such cases, and which were not properly equipped or staffed for the treatment of such. This has necessitated the retransfer of these patients sometimes over long distances, involving unnecessary discomfort of travel for the crippled soldier and unnecessary expense to the Government.

2. Hereafter all cases of amputation (except fingers and toes) arriving at debarkation hospitals of the port of Hoboken will be sent to General Hospital No. 3, Colonia, N. J., and there studied for final assignment.

3. This change will be made upon the list of hospitals designated for overseas cases, and instructions given to all officers designating overseas cases for assignment to interior hospitals.

(*Cir. Letter No. 75, Surgeon General's Office, February 5, 1919.*)

Transfer of Soldiers to Convalescent Centers.

1. Transfer cards on Form 52, M. D., are not required for soldiers transferred in accordance with existing instructions from the War Department from hospitals to convalescent centers. The transferring hospital should close each case thus transferred by a notation on Form 52, M. D., paragraph 16 (disposition), "Duty (transferred to convalescent center, ...)." For the information of the responsible medical officers, a brief abstract of the clinical records, together with any X-ray or laborating findings, should accompany each case thus transferred. (See par. 3, Circular Letter No. 86, Surgeon General's Office.)

2. It is unnecessary to take up on sick report, upon arrival, soldiers thus transferred to convalescent centers. When any soldier in a convalescent center is, however, in need of medical treatment in hospital or in quarters, the case should be handled as that of any other soldier in any organization who is in need of medical treatment. When the special treatment or training of convalescents at convalescent centers is completed, any that are to be discharged (see par. 5, Circular 90, War Department, 1918) who are permanently unfit for all military duty should be

discharged on certificate of disability in accordance with existing instructions. In all such cases the letter of notification as required by paragraph 160, A. R., should be forwarded. Any that are not already on sick report should be carded for record and the report, on Form 52, M. D., should be forwarded (pars. 428–d and 457, M. M. D.).

3. The above instructions do not in any way modify any existing instructions from the War Department or the Office of the Surgeon General. They are issued to secure uniformity of action and to clear up uncertainty which apparently exists in the minds of some responsible medical officers.

(*Cir. Letter No. 99, Surgeon General's Office, February 20, 1919.*)

Transfer of Peripheral Nerve Cases from Overseas.

1. In order to afford the overseas wounded the benefit of special professional skill and experience, special hospitals have been designated for the treatment of certain types of surgical cases. Peripheral nerve injuries by reason of their complexity demand cooperation of a neurologist, a surgeon skilled in neurologic surgery, an orthopedist, and a well-developed physiotherapeutic department. In the 11 special hospitals devoted to the peripheral nerve injuries, particular care has been exercised to fulfill the above.

2. In Circular Letter No. 13, paragraph 4, dated January 7, 1919, it is stated that:

> Special hospitals have been designated for the treatment of certain types of surgical cases; e. g., amputations, peripheral nerve injuries, maxillofacial cases, etc., where special personnel and facilities for treatment are available. If cases so grouped in the list of hospitals designated for overseas cases, sent out by the Hospital Division of this office (a copy of which is herewith inclosed), should by error be sent from the ports of debarkation to hospitals not listed to receive them, and not fully prepared with personnel, equipment, or special apparatus to give them the best possible treatment, notification should at once be sent to the Surgeon General, attention Hospital Division, stating the number and diagnosis of such cases and the date of their admission to the hospital.

3. Many peripheral nerve cases have become unavoidably scattered throughout the general and base hospitals.

4. Commanding officers are therefore directed to recommend the transfer of peripheral nerve cases to the special hospitals to insure to the patients every possible advantage in recovering power.

5. These special hospitals are located as follows: General Hospital No. 1, Williamsbridge, N. Y.; General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 3, Colonia, N. J.; General Hospital No. 6, Fort McPherson, Ga.; General Hospital No. 11, Cape May, N. J.; General Hospital No. 26, Fort Des Moines, Iowa; General Hospital No. 28, Fort Sheridan, Ill.; General Hospital No. 29, Fort Snelling, Minn.; Walter Reed General Hospital, Takoma Park, D. C.; Letterman General Hospital, San Francisco, Calif.; and Base Hospital, Fort Sam Houston, Tex.

6. Recommendation for transfer will immediately be sent to the Surgeon General, attention Hospital Division.

(*Cir. Letter No. 100, Surgeon General's Office, Februray 21, 1919.*)

Transfer of Patients to Fort Riley, and Convalescents to Convalescent Center, Camp Funston.

1. It has been reported to this office that in many instances patients are transferred to the Base Hospital, Camp Funston, when it is intended that they be transferred to Base Hospital at Fort Riley. There is no base hospital at Camp Funston.

2. Similarly, patients are being sent to the Convalescent Center, Fort Riley, when it is intended that they be sent to the convalescent center at Camp Funston. There is no convalescent center at Fort Riley.

3. The Surgeon General directs that hereafter patients intended for base hospital be sent to Base Hospital, Fort Riley, and that convalescent patients intended for the convalescent center be sent to Convalescent Center, Camp Funston.

(*Cir. Letter No. 108, Surgeon General's Office, February 25, 1919.*)

Notification of Transfer of Patients.

1. It has been reported to this office that frequently patients are transferred from one hospital to another, and that the receiving hospital is not informed in advance of the arrival of the patients, resulting in delay, inconvenience, and occasional suffering on the part of disabled men.

2. It is therefore directed that the probable time of arrival at the destination be telegraphed to the receiving hospital in all cases of transfer of patients.

3. In all cases of transfer of patients to hospitals in or about New York City, or in cases of transfer of patients who pass through New York City, this information will be telegraphed in advance to the surgeon, Port of Embarkation, Hoboken, N. J., attention Maj. H. N. Kerns, M. C., in order that arrangements may be made for necessary transportation and attendants to meet the patient and conduct him to the hospital, or to assist him to the train, in the event that he is passing through New York City.

(*Cir. Letter No. 308, Surgeon General's Office, September 26, 1919.*)

Transfer of Patients to General Hospitals.

1. Several requests have been received recently from camp surgeons for blanket authority to transfer patients requiring special treatment, for which the facilities and personnel of camp hospitals are not adequate, to near-by general hospitals, without reference to the War Department, in each specific instance where transfer is indicated.

2. It is considered inadvisable to give general authorization for such transfers, but this office approves, in principle, the policy of transferring certain special cases, that can not be properly attended to at camp hospitals, to general hospitals, which are more completely equipped and staffed to handle the more complicated cases.

3. It should be possible to give definitive treatment in camp hospitals to practically all sick coming from the command. Requests have recently been received for the transfer of patients who require operations for varicocele, hypertrophied tonsils, and similar minor conditions. Camp hospitals should be prepared to care for such patients. There are, however, special cases where it can be seen from the beginning, prolonged hospitalization will be required, or facilities for study or definitive treatment necessary which are not present at the camp hospitals. Application should be made to this office, through the commanding officer of the camp, for the necessary authority for the transfer of those cases to a general hospital. In urgent cases application may be made by telegraph.

4. In the recommendation for transfer, the diagnosis and a brief clinical history of the case should be given, together with the reasons why transfer to a general hospital is considered necessary. This information is desired to enable this office to take intelligent action upon such applications for transfer.

(*Cir. Letter No. 332, Surgeon General's Office, October 21, 1919.*)

Transportation of Sick to General Hospital No. 28, Fort Sheridan, Ill.

1. Attention is invited to the fact that many patients are being transferred to General Hospital No. 28, Fort Sheridan, Ill., and furnished transportation to Chicago only. As this hospital is 35 miles out of Chicago, it is directed that care be taken to see that all patients are furnished transportation to General Hospital No. 28, Fort Sheridan, Ill., and not to Chicago. Ill.

(*Cir. Letter No. 360, Surgeon General's Office, December 3, 1919.*)

LABORATORIES.

Suggestions for Laboratory Duties.

1. The following communication is being sent to each of the Army laboratories for the purpose of establishing standard methods of administration and technique.

2. The laboratories are to do board of health work for the camps, as well as the work for the hospital.

3. Laboratories should be prepared to examine large numbers of diphtheria and meningococcus carriers per day. In absence of other media for meningococcus, about 5 per cent human blood in plain agar may be used. Smears from throats of meningococcus and diphtheria cases and carriers should be made by regimental medical officers or sanitary inspectors; laboratory staff to see that plates are kept warm while in transit to and from the laboratory and that technique used is suitable.

4. Examine urine and stools of every typhoid convalescent until three negative examinations have been obtained.

5. Make routine Wassermann tests on all cases admitted. (This for National Army only.) National Guard camps must send blood to department laboratories. The Wassermann reaction as done at the Army Medical School uses an antihuman system, but this system is not compulsory.

6. Prepare to make and examine blood cultures on every febrile case in the wards that remains undiagnosed three days.

7. Wherever southern troops are stationed, do routine stool examinations for intestinal parasites.

8. Prepare to do pneumococcus type differentiations.

9. Keep on hand a stock of laboratory animals and, wherever practicable, breed own animals. The supply officer has authority to purchase animals and fodder.

10. Prepare to examine organizations for typhoid carriers.

11. Personnel to be trained in the Schick reaction. The toxin can be obtained on requisition.

12. Routine blood counts, examinations for malaria, tuberculosis, gonococcus, spirochæta, and urine examinations are preferably made in the wards rather than in the general laboratory. A requisition may be submitted for the equipment for ward laboratories. A list of suitable articles is appended.

13. Prepare to make routine examinations of water supplies.

14. Enlisted men for laboratory assistants may be obtained from the commanding officer of the base hospital, or from the adjutant of the division from the men of the division at large who have laboratory training, or on request to the Surgeon General's Office.

15. Enough officers and enlisted men must be trained by the officer in charge of the laboratory so that an adequate laboratory personnel can be ready to leave with troops and still not embarrass the camp hospital laboratory.

The following suggestions for specimen collection are appended. Local conditions must determine their final form:

Efficient laboratory service requires cooperation between the wards and the laboratory personnel. Careful collection, labeling, and delivery of specimens are necessary on the part of the ward personnel. Routine work must be done at specified times. For special work the laboratory personnel should be informed as to exactly what examination is desired. The chief of the laboratory will be ready at all times to instruct and assist the ward personnel in the proper handling of specimens.

ROUTINE EXAMINATIONS.

1. For routine examinations the head nurse will make out the laboratory request slip and forward it directly to the laboratory. At the same time she will make out a tag with the patient's name and the kind of specimens to be collected.

2. These tags will be attached to a container by the nurse and turned over to the ward master for proper collection and delivery.

3. Laboratory request slips will not be used as labels.

4. No unlabeled or improperly labeled specimens will be received at the laboratory.

5. Ward masters will keep on hand a supply of specimen containers and tags.

6. All specimens and requests on which report is desired the same day should be in the laboratory by 11.30 a. m.

7. Sputum and stool specimens delivered in the laboratory for examination will be placed on a separate tray designated for the purpose.

8. All specimens will be taken to the laboratory as early as possible, and all specimens collected during the late afternoon or at night will be delivered between 7 and 7.30 a. m.

SPECIAL EXAMINATIONS.

The Wassermann reaction will be done on Tuesdays and Fridays; specimens collected by ward officer. Sterile tubes and needles in tubes will be prepared by the laboratory and supplied on request. Specimen tubes must be labeled with patient's name and date of collection. Request card to be sent to the laboratory with the specimen, and needles returned with the specimens.

FURTHER SUGGESTIONS FOR COLLECTION OF BLOOD FOR WASSERMANN REACTION.

1. Blood should be collected in dry sterile tubes, through a dry needle, because moisture may cause hemolysis.

2. Blood should stand for at least an hour at room temperature before it is put in the ice box. Blood which is put immediately in the ice box usually fails to separate properly.

3. The person collecting the blood should be responsible for the labeling and dating of the tube.

4. Wassermann cards should be filled out and cases of obscure nature labeled "for diagnosis."

5. Complaints of any kind should be made at once to the laboratory officer.

SPECIAL EXAMINATIONS.

1. The same tubes as those used for blood specimens will be used for collecting spinal fluid, and the ward officer doing the puncture may obtain needles in tubes from the laboratory on request. Needles must be returned with specimens.

2. Other special examinations will be arranged for directly with the chief of the laboratory by the officer making request.

REPORTS.

1. Reports will be made promptly by the laboratory. If incomplete, the reason therefor will be stated.

2. Reports will be returned to the head nurse who made out request, except in case of requests under paragraph 2 above, in which case the report will be returned to the officer making the request.

3. All sterile apparatus used for collection of specimens to be prepared in laboratory and kept in order by the laboratory force. Special attention to be directed to the sharpening of needles.

WARD LABORATORY EQUIPMENT.

1. *General.*—Alcohol lamps, distilled water, disinfecting solutions, waste jar, filter paper in sheets.

2. *Microscopic work—General.*—Microscope, complete (1); dark field condenser (1) for G. U. wards; special lamp for dark field (1) for G. U. wards, B. & L., 1782; cover glasses, thin, ½-ounce; Stender jars for clean cover glasses (2); slides, regular, in ½-gross boxes (2 boxes); Stender jars for clean slides (2); bottle for immersion oil (1).

3. Containers for reagents in blood and sputum work. Bottles for stains; TK. type, 2-ounce. (Stains to be obtained from the main laboratory.) For methylene blue, carbolfuchsin, gentian violet, Gram's iodine, Wright's stain, Bismarck brown, staining jars, Coplin, for acid alcohol, alcohol (5), Gram's solutions (2), Wright's stain.

4. Hemocytometer (1); hemoglobinometer, Tallquist (1).

5. Special apparatus for urine work. Centrifuge, hand or water (1); centrifuge tubes, plain, 15 c. c. (1 dozen); medicine droppers (4); bottles, 4-ounce, vial mouth for collecting specimens (4 dozen); corks to fit last item (200); labels, Dennison, in books of 750, books (2); pencils, wax (4); funnels, 3-inch, short stem (2 dozen); urinometers (2); test tubes, thin glass (regular chemical) 150 by 16 mm. (200); test-tube holders, wire (2); test-tube racks, wooden, to hold 12 tubes (4); nitric acid (1); Fehling's alkaline solution (1); Fehling's copper solution (1); Benedict's qualitative reagent (1).

6. Supplies in original packages. Antiformin; litmus paper, neutral, in tubes; filter papers, round, 12½ cm. diameter, in packages of 100.

(*Letter from the Surgeon General to commanding officers of hospitals.*)

Technique for Detecting Meningococcus Carriers.

1. The chief of the laboratory at one base hospital has organized and is successfully operating the following system for the detection of carriers:

2. Two or three men borrowed from other duties are used as swabbers. The method of swabbing was as follows: A straight wooden swab stick, with a small cotton wrapping at one end, is thrust directly backward, horizontally with the ground, into the nares until it strikes the posterior wall of the nasopharynx. It is then rotated and withdrawn. The swab is then smeared on a section of a plate; one plate serving for three or four men. The plates are poured on the evening before, the media being a glucose agar, enriched with any available animal blood serum, sometimes human, sometimes sheep, sometimes horse. The plates are then put up three in a wrapper and packed in cartons containing three groups of three. These cartons are then placed in large wooden packing cases in which a couple of hot water bottles are placed. From 500 to 1,000 cultures are being taken on swabbing days, which is often every day. In the later afternoon the plates are brought back to the laboratory and placed in the incubator. An incubator has been built, the size of a small room, which works very well and gives adequate space. It is made of two thicknesses of wall board with an air space of about 1½ inches. It is heated by large electric-light bulbs. The following morning the plates are examined and the colonies are smeared and stained by gram. Those colonies which show gram positive organisms are disregarded and subcultures are made only from those which

have shown gram negative diplococci. The subcultures are made on slants of sheep serum water-glucose agar. As soon as these have developed sufficient growth, agglutinations are done, using for this purpose throughout a 1 to $\frac{1}{1000}$ dilution of polyvalent antimeningococcus serum. The agglutinations are carried out in the usual manner and, as a rule, from 8 to 10 carriers are detected in each company from which a case has been supplied. A company which has been cultured once is recultured at the end of four to six days, and, as a rule, the second culture detects one or sometimes two further carriers. Occasionally a third culture is made and this usually shows no carriers. An interesting example of the practical accuracy of this method is shown by the following: No colonies were found on the plates from a certain company. The bacteriologist working on this set of plates supposed that it was a new organization and was very much disturbed because he thought that the media was not working properly. On looking up the records, however, he found that he had been examining the third swabbing of the company, from which on two previous swabbings carriers had been removed. The carriers are all withdrawn and placed in a segregation camp, which now numbers approximately 350. This carrier camp is cultured at intervals and the free men are discharged. The dichloramin-T sprays are being used in the carrier camp and also in the main camp. The average duration of carriage is between 9 and 11 days. The most effective organization for carrying out this scheme is to have one or at most two men skilled in picking colonies and agglutination; two to four careful and honest workers to make the transplants; thirdly, a group of men for swabbing, and one clerk to keep careful notes of the position of the men in the barracks and make other sociological and epidemiological observations.

3. Very few cases of meningitis have developed in the carrier camp.

(*Cir. Letter, Surgeon General's Office, December 7, 1917.*)

Examination for Typhoid Carriers.

1. You are requested to furnish this office answers to the following questions:

(*a*) Number of persons examined for typhoid carriers by examination of stools.
(*b*) Number of persons examined for typhoid carriers by examination of urines.
(*c*) Total number of stools and urines examined.

(*Cir. Letter, Surgeon General's Office, April 2, 1918.*)

Diagnosis of Pneumonias.

1. All medical officers are requested in future to give the name of the causative organism in addition to the diagnosis of the kind of pneumonia and the type of pneumococcus whenever known.

2. Thus, pneumonia, lobar, should, if practicable, be reported as:
    Pneumonia, lobar, pneumococcus, type 1.
    Pneumonia, lobar, pneumococcus, type 2.
    Pneumonia, lobar, pneumococcus, type 3.
    Pneumonia, lobar, pneumococcus, type 4.
    Pneumonia, lobar, pneumococcus, type unclassified.

3. Also bronchopneumonia should, if practicable, be reported as:
    Bronchopneumonia, pneumococcus, type 1.
    Bronchopneumonia, pneumococcus, type 2.
    Bronchopneumonia, pneumococcus, type 3.
    Bronchopneumonia, pneumococcus, type 4.
    Bronchopneumonia, pneumococcus, type unclassified.
    Bronchopneumonia, streptococcus, hæmolyticus.
    Bronchopneumonia, streptococcus, other types.
    Bronchopneumonia, streptococcus, unclassified.
    Bronchopneumonia, other organisms.

(*Cir. Letter, Surgeon General's Office, May 28, 1918.*)

Typhoid and Paratyphoid Bacillus Carriers.

1. In future it is recommended that whenever the diagnosis of chronic typhoid or paratyphoid bacillus carrier is made, a transfer of the organism isolated be sent to the Army Medical School, Washington, D. C., for confirmation. This is necessary, since a number of the cases have, on careful examination, turned out not to be typhoid or paratyphoid bacillus carriers, and unnecessary trouble and expense have been caused by failure to have confirmation of the culture made.

(*Cir. Letter, Surgeon General's Office, August 13, 1918.*)

Information Desired.

1. Inclosed are forms showing information desired by this office in each case in which a diagnosis of typhoid or paratyphoid fever is made.

2. Upon the conclusion of each case, return to this office promptly, attention Laboratory Division.

Information desired by Office of the Surgeon General in cases of typhoid fever and paratyphoid fever and suspected typhoid fever and suspected paratyphoid fever.

1. Name of patient ....
2. Rank and organization..........
3. Date of enlistment.......... Where mustered in..........
4. Age.......... 5. Last station and date of joining present station..........
6. Date taken sick.......... Where..........
7. Date admitted to sick report.......... Where.......... By whom..........
8. Result of laboratory findings (state by what laboratory the findings were made; give the day of the disease on which each blood culture is made; remember that agglutinations are positive among vaccinated men, regardless of the diagnosis; examination of the urine and feces is of value in detecting carriers but is unimportant as a diagnostic measure)..........
....
9. Has patient been vaccinated against typhoid and paratyphoid fever? If so, with what vaccine; number of doses with dates and name of place administered (from records available, consult descriptive list); also temperature prior to administering first dose..........
....
10. Any history of previous attack of typhoid or paratyphoid fever..........
....
11. Soldier's statement regarding vaccination, particularly with reference to number of doses....
....
12. Medical history of present attack (to accompany on regular form).
13. Whether cases of typhoid or paratyphoid fever exist in the post or neighborhood among soldiers or civilians..........
14. Probable source; date of injection..........
15. Diagnosis..........
16. Remarks..........

Date..........
Station..........
Signed..........

(*Cir. Letter, Surgeon General's Office, August 15, 1918.*)

Examination of Newly Drafted Men for Hookworm and Malaria.

1. Your attention is invited to the following memorandum issued from this office under date of February 23, 1918:

(1) Reports received in this office indicate that there is a higher morbidity and mortality rate for the serious infectious diseases among troops drawn from the South than is the case among troops drawn from sections of the North where the distribution into rural and urban corresponds approximately with that found in the South. It is believed that uncinariasis and chronic malarial infections are both factors of much importance in producing this higher morbidity and morality rate by reason of the lowered resistance which they produce. As is well known, infestation with a certain number of hookworms is extremely common in the South, the percentage in rural communities ranging from 60 to 100 per cent.

(2) In connection with the arrival of newly drafted men in the National Army and other camps it is deemed of great importance that infections with hookworm and malaria should be treated before the men become exposed to the general infection so commonly found in large camps. All practicable measures should be taken for the early detection of uncinariasis and chronic malaria and for the adequate treatment of the infected. The indiscriminate treatment of persons coming from hookworm or malarious sections, prior to a definite diagnosis, should not be practiced. Laboratory facilities should be used to the utmost. Additional laboratory personnel and equipment will be furnished if needed, and prompt telegraphic request for same should be made. Where detention camps are established the examinations and treatment should, as far as practicable, be carried out during the period of detention.

2. These instructions are supplemented as follows:

All recruits and recently inducted men from the following States or other political divisions should be examined for hookworm as soon as possible after their arrival in your camp: Maryland, Virginia, District of Columbia, West Virginia, Kentucky, Missouri, Oklahoma, Texas, and all States lying to the south of them, and also Porto Rico, Cuba, Mexico, Hawaii, the Philippine

Islands and other tropical countries. Troops coming from other States who have been serving for six months or more in the hookworm region should also be examined and, when necessary, be treated for the disease. In addition, all patients admitted to hospital should be examined for intestinal parasites as rapidly as men can be trained for the work.

(*Cir. Memo. for camp and division surgeons, etc., August 17, 1918.*)

Typhoid and Paratyphoid Fevers, Diagnosis of.

1. Attention is invited to paragraphs 184 to 191, M. M. D., 1916, and Changes No. 8, February 14, 1918.

2. Cases of typhoid fever are being reported in which no effort, or inadequate effort, has been made to establish the diagnosis by blood culture, which leads to many diagnoses of doubtful value. Making blood cultures has been so simplified and the results when positive are so satisfactory that a failure to use the method is a reflection on the administration of the Medical Department at the place where the case occurs.

3. Isolation of the causative organisms from the stool and urine is of great value in the detection of carriers and may furnish the only positive evidence when repeated blood cultures have been negative, but should not be relied upon for making a diagnosis of the disease.

4. Widal reactions are, of course, of no value in vaccinated men, since they are positive, regardless of the nature of the illness.

5. The clinical history and special reports should show the date of each blood culture made, with the results of each culture, and the day of the disease on which a positive culture was first obtained should be given.

(*Cir. Letter, Surgeon General's Office, September 6, 1918.*)

Pneumonia and Empyema Clinical Records.

1. The pneumonia board desires to be furnished the complete clinical records (Form 55 and subdivisions) of all cases of pneumonia, primary and secondary, lobar and broncho, and of empyema occurring in your hospital from July 1, 1917, to June 30, 1918, inclusive.

2. You are therefore directed to forward the clinical records, above described, at once to the office of the Surgeon General, attention Laboratory Division.

3. If for any reason the return of these records is desired by you, request therefore should be made at the time they are forwarded, otherwise they will be sent to the Sick and Wounded Division of this office when the pneumonia board has completed its work with them.

(*Cir. Letter from the Surgeon General, September 18, 1918.*)

Ward Laboratories.

1. The establishment of accessory laboratories with limited equipment in the hospital wards has been authorized.

2. It is intended that these laboratories shall serve the following purposes:

(*a*) To furnish facilities for the making of the simpler examinations of urine, blood, smears from exudates, etc., which the clinicians in the wards may desire to see for themselves.

(*b*) To facilitate the making of certain of these simpler routine examinations by rendering it unnecessary to transport all of these specimens to the central laboratory.

3. Only such examinations should be carried out in these ward laboratories as can be properly performed with the comparatively simple facilities provided. Clinical microscopy alone should be attempted. Incubators, electric centrifuges, and other bulky apparatus can not be furnished.

4. The chief of laboratory will maintain the equipment and supplies of these laboratories with such assistance as he may need from the ward personnel in the care and maintenance of the property.

5. The work performed in these laboratories may be carried out by such officers, enlisted men, or other ward personnel as may be detailed for this service by chief of the medical or surgical services. All work performed in these laboratories should be done in accordance with such instructions as may be issued by the chief of laboratory and with such reports as he may require.

(*Cir. Letter, Surgeon General's Office, September 28, 1918.*)

Diagnosis of Pneumonias.

1. Attention is invited to the attached copy of letter from this office of May 28.[1]

2. You are requested to reply by indorsement, stating whether it is practicable to report pneumonias as outlined in paragraphs 2 and 3 of the accompanying letter.

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[1] See "Diagnosis of Pneumonia," supra.

3. You are further requested to state on report card, Form 52, if practicable, in each case of pneumonia which may occur, whether the patient has received the pneumococcus vaccine.

(*Cir. Letter, Surgeon General's Office, October 8, 1918.*)

Prophylactic Vaccination Against Pneumococcus and Bacillus Influenzae.

1. The value of vaccination against certain of the more important organisms giving rise to pneumonia may be considered as established by the experiments of Lister in South Africa, and by the more recent results of prophylactic vaccination in our own Army.

2. In South Africa, during the past four years, Lister has given prophylactic vaccination against the three most important types of pneumococcus there prevalent. In this period not a single case of pneumonia due to a pneumococcus of the type used in the vaccine has occurred among the vaccinated individuals, each of whom has, as a rule, been under observation for about nine months following the vaccination.

3. In our own Army vaccination was given last winter as a prophylactic measure to half of one division, using a vaccine containing pneumococcus, Types I, II, and III. During the 10 weeks from the period of vaccination until the troops went overseas, pneumonia due to these types of pneumococcus did not occur at all among the vaccinated troops, whereas among the unvaccinated it occurred a trifle more frequently than in the period before vaccination.

4. The Army has now available for all officers, enlisted men, and civilian employees of the Army, a lipo vaccine containing pneumococcus, Types I, II, and III. The dose of this for prophylactic use is 1 c. c. given subcutaneously and a single injection suffices. The reaction, local and general, is about comparable with that following typhoid vaccination; as a rule, rather less severe.

5. In view of the possible etiologic importance of the *Bacillus influenzae* in the present epidemic, a saline vaccine has been prepared by the Army and it is available for all officers, enlisted men, and civilian employees of the Army. The effectiveness of *Bacillus influenzae* vaccine as a prophylactic measure in controlling this epidemic must be considered as still in the experimental stage. Being a saline vaccine, it is probable that more than one injection will be required to obtain maximal protection. It may be given at the same time as the pneumococcus vaccine in the opposite arm. The reaction, local and general, of this vaccine is extremely slight.

6. These vaccines may be obtained from the Army Medical School, Washington, D. C., on requisition made directly to the commandant, by letter or telegram.

7. As these vaccines are now available for prophylactic use and are prepared by standardized methods, and as in the case of the pneumococcus vaccine the proper dosage and the protective efficiency have been established by the investigations conducted by the Army, the vaccines obtained from the Army Medical School will be employed in the future in the Army when pneumococcus or influenza vaccines are desired, to the exclusion of any other vaccines prepared from these organisms.

8. It must be understood that vaccination against influenza and pneumonia is not compulsory, and should be given only with the knowledge and consent of the individual.

(*Cir. Letter, Surgeon General's Office, October 25, 1918.*)

Triple Typhoid Lipovaccine.

1. The Army Medical School, Washington, D. C., has available a sufficient quantity of triple typhoid lipovaccine to meet all the requirements of the Army. This is a concentrated vaccine in oil containing the typhoid, paratyphoid A, and paratyphoid B bacilli. The dose is 1 c. c. Only one injection is required.

2. Requests for a sufficient quantity of this lipovaccine to immunize all members of the command not immunized since their entry into the service should be forwarded promptly through the usual channels. Upon its receipt all stock of saline typhoid, paratyphoid, and triple typhoid will be destroyed and a report made to this office quoting the file number in the upper left-hand corner of this letter as the authority therefor in order that proper credit may be given.

(*Cir. Letter, Surgeon General's Office, November 4, 1918.*)

White Mice.

1. The use of the prophylactic pneumococcus vaccine on a large scale renders it necessary, in order that the results may be properly interpreted, that in all cases of pneumonia the pneumococcus present should be classified according to type. This necessarily involves the use of white mice in addition to the special culture methods.

2. In order that this office may take the necessary steps to secure to all laboratories a sufficient supply of white mice, answers to the following questions are requested:

(*a*) How many mice do you estimate you will need per month during the coming winter?

(*b*) Have you an adequate supply arranged?

(*c*) If not, are any of the stations or dealers on the inclosed list located sufficiently near your post to allow easy and safe transportation of mice?

(*d*) If a dealer or station is near your vicinity, can you locally make arrangements for the supply of mice you will need? If so, notify this office when your supply is arranged.

3. A prompt answer to the above questions is desired in order that an adequate system of supply may be arranged.

(*Cir. Letter, Surgeon General's Office, November 6, 1918.*)

The Use of Army Pneumococcus Vaccine Among Soldiers Soon to be Discharged and Among Civilians.

1. The Medical Department of the Army is developing the use of a lipovaccine as a preventive of pneumonias due to pneumococci of Types I, II, and III. It is not intended for treatment. Some very favorable evidence of its protective value has already been secured as a result of its voluntary use among officers and soldiers and its development along this line will continue. In order, however, to extend the expected benefits of this preventive measure and also to determine its value more exactly and on a broad scale, its use among soldiers soon to be discharged and temporarily among civilians is authorized and encouraged on condition that the results are furnished to the Surgeon General.

2. The immunizing effects of this vaccination can be known only by following up the pneumonia record of those vaccinated. For this purpose, the following directions are given:

(*a*) *Soldiers.*—For soldiers soon to be discharged, Form 52 should be filled out as usual, according to previous instructions. The soldier's future mail address should also be entered on Form 52 so that follow-up letters can be sent to him later. In addition, a special record card is furnished which should be filled out and given to the soldier. Directions for its use are given on the back of the card.

(*b*) *Among civilians.*—A set of three cards each is furnished for each patient. These should be filled out and distributed according to the directions on the back of the cards. One is to be given to the patient, one is to be kept by the patient's physician, and one is to be sent to the Surgeon General.

3. *Technique.*—Detailed directions for administration will be found in each package of vaccine sent out by the Army Medical School.

4. The vaccine can be obtained by requesting it directly from the commandant of the Army Medical School, Washington, D. C.

(*Cir. Letter No. 16, Surgeon General's Office, January 10, 1919.*)

Report of Cases of Smallpox.

1. A report of each case of smallpox, or suspected smallpox, occurring since January 1, 1917, will be sent at once to this office, attention Laboratory Division. Model form for report inclosed.

2. Where no cases of smallpox, or suspected smallpox, have occurred to date, statement to this effect will be sent.

3. All cases occurring in the future will, upon completion, be reported as above.

(*Cir. Letter No. 68, Surgeon General's Office, February 1, 1919.*)

Return to Saline Vaccines.

1. Beginning with date of receipt of this letter, saline triple typhoid vaccine and saline pneumococcus vaccine, Types I, II, and III, will be used in place of the corresponding lipovaccines used to date.

2. Lipovaccines were adopted as a war measure on account of their obvious advantages and have served their purpose. The technique of manufacture, however, needs further improvement and the duration of their protective power as compared with that of saline vaccines needs further investigation. Saline vaccines will therefore be used as a routine and lipovaccines will be reserved for emergencies.

3. All surplus lipovaccines will be returned to the Army Medical School, Washington, D. C., and to such place as may be directed in the American Expeditionary Forces.

4. Saline vaccines can be obtained by direct request to the commandant, Army Medical School, Washington, D. C., as heretofore.

(*Cir. Letter No. 134, Surgeon General's Office, March 12, 1919.*)

Lethargic Encephalitis.

1. It is desired to secure material from fatal cases of lethargic encephalitis for inoculation and for pathological examination.

2. The material should be from typical cases of encephalitis. Every effort should be made to rule out clinically and pathologically tuberculous meningitis, epidemic meningitis, anterior poliomyelitis, chemical poisonings, and other toxic conditions, such as alcoholism, botulism, etc.

3. For inoculation the material should be obtained as soon as possible after death. Aseptic precautions should be taken in obtaining the material, which should be placed at once in a sterile solution consisting of equal parts of glycerin and 0.9 per cent salt solution. The most important parts to preserve are from the brain and cord, especially medulla, pons and basal ganglia. Rather thick blocks should be taken and each block placed in a separate container.

4. Blocks from the same areas should be placed in separate containers in 10 per cent formalin. This will be done in every case whether or not it has been possible to obtain material for inoculation. Blocks of tissues from other organs should be included.

5. All material will be securely wrapped and sent to the Army Medical School direct by parcel post or express, together with a brief of the clinical history and a complete autopsy protocol, including information as to the area from which each block was taken.

6. Acknowledgment for assistance in this work will be made.

(*Cir. Letter No. 195, Surgeon General's Office, May 1, 1919.*)

Department Laboratories.

1 Department laboratories are maintained to afford more complete laboratory facilities for troops in each department than are available at post or camp hospital laboratories, to make investigations and examinations for the department surgeon in relation to the prevention and control of disease, and to conduct researches on appropriate subjects.

2. Their activities are outlined in paragraphs 351 to 360, inclusive, Manual Medical Department, 1916, and embrace the following procedures:

General and special bacteriology; general and special serological work, including Wassermann and other standard complement fixation technique; histo-pathological examinations; analyses of water supplies (bacteriological and chemical); special chemical examinations; distribution of containers for specimens; distribution of routine and special culture media; bacteriological surveys; confirmation of organisms of the typhoid-paratyphoid and dysentery groups.

3. Department laboratories have been designated or established for all territorial departments of the Army and are located as follows:

Department laboratory, Northeastern Department, Fort Banks, Boston, Mass.

Department laboratory, Eastern Department, Army Building, Whitehall Street, New York, N. Y.

Department laboratory, Southeastern Department, Fort McPherson, Ga.

Department laboratory, Central Department, Fort Sheridan, Ill.

Department laboratory, Southern Department, Fort Sam Houston, Tex.

Department laboratory, Western Department, Letterman General Hospital, the Presidio of San Francisco, Calif.

Department laboratory, Hawaiian Department, department hospital, Honolulu, Hawaii.

Department laboratory, Philippine Department, department hospital, Manila, P. I.

The departmental laboratory work of the Department of Panama is being done at the board of health laboratory, Ancon, Canal Zone.

Special laboratory work for troops in Porto Rico is being done at the Tropical Diseases Institute, San Juan, P. R.

4. All Medical Department units (including veterinary units) located in the territorial limits of a department, including independent units and those attached to independent commands exempted from departmental control are authorized to call on the laboratory of their territorial department for such of the technical work indicated in paragraph 2 as may be necessary or desirable. Direct correspondence and reports relating to the professional work of the laboratory is authorized, as is indicated in paragraph 351, Manual Medical Department, 1916.

5. Subcultures of all organisms of the typhoid-paratyphoid or dysentery group, as well as unusual organisms isolated in hospitals within the territorial limits of a department, will be sent to the department laboratory for confirmation.

(*Cir. Letter No. 330, Surgeon General's Office, October 20, 1919.*)

Laboratory Animals.

1. Laboratory animals (rabbits, guinea pigs, white mice, and white rats) are required for use at certain stations.

2. Animals of the above-mentioned types that may be on hand at hospitals or laboratories in excess of present or anticipated requirements will be reported to this office, the number of each being specified.

3. Hospitals or laboratories scheduled for closure will report all surplus animals on hand, as indicated in paragraph 2, and will specify the date on which such animals will be available for transfer to other stations.

4. Hereafter the monthly report of the laboratory service will bear a notation showing the number of surplus laboratory animals on hand available for transfer.

(*Cir. Letter No. 322, Surgeon General's Office, October 9, 1919.*)

FOOD AND NUTRITION.

Camp Nutrition Officer.

Authority has been granted to station an officer of this division of the Medical Department, to be known as nutrition officer, in each of the military camps whose strength exceeds 10,000 men. Such an officer will be appointed to your camp soon, if one has not already reported for that duty.

2. The duties of these officers as authorized by a general order will be as follows:

(*a*) To advise the commanding officer, the camp quartermaster, and the camp surgeon on all matters relating to the composition and nutritive value of foods.

(*b*) To inspect, as directed by the commanding officer, foods and rations in the hands of organizations with reference to nutritive value, freedom from adulteration, spoilage, or deterioration from any cause.

(*c*) To cooperate with the School for Cooks and Bakers, where such schools exist, in the instruction of mess sergeants and mess officers in the fundamentals of nutrition, to wit, purposes served in nutrition by the different foodstuffs (protein, fats, carbohydrates, mineral salts, and vitamines), and the proper construction of dietaries so as to insure a satisfactory distribution of these nutrients.

(*d*) To assist in the coordination of mess requirements with subsistence supplies, whether carried by the camp quartermaster or purchased locally.

(*e*) To cooperate with and advise the conservation and reclamation officer with reference to the best classification, separation, and disposition of wastes from food.

(*f*) To render directly to the camp commander reports on urgent food matters that require immediate executive action.

(*g*) To report through the camp surgeon on all matters relating to food conditions of the camp as these may affect the nutritional welfare of the troops.

3. It is requested that a copy of the camp order defining the duties of this officer as applied to local conditions be supplied to this office. The following outline of such duties, approved by the commanding general of Camp Upton for that camp, is submitted as a suggestion:

A. Inspection of mess conditions, reporting conditions found in the following manner:

(*a*) The quality of food and character of the cooking to the camp surgeon.

(*b*) The coordination of mess requirements with subsistence supplies to the camp quartermaster through the camp surgeon.

(*c*) The character of subsistence supplies purchased locally and their coordination with mess requirements, in cooperation with the camp sanitary inspector, to the commanding officer, through the camp surgeon.

B. School for mess officers on the general principles of nutrition. Their instruction to include the following:

(*a*) Purposes served in nutrition by the different foodstuffs (protein, fats, carbohydrates, mineral salts, vitamines).

(*b*) Proper construction of dietaries so as to insure a satisfactory distribution of these nutrients.

(*c*) Proper construction of dietaries to avoid waste and to conform with rulings of the United States Food Administration, in so far as it is practicable.

(*d*) To avoid the so-called nutritional diseases (scurvy, war edema, etc.) in case troops are placed on restricted diet.

C. The issuing of food bulletins to mess officers and mess sergeants showing the current prices of various food articles that can be purchased outside, taking into account the quality and food value per unit of cost of these articles. These bulletins to be issued and explained in conjunction with the school above mentioned.

4. If deemed advisable by the camp authorities, the nutrition officer would be competent to supervise all dietaries or even prepare them a week in advance for the entire camp after the manner of the Canadian and English camps in England.

5. The nutritional surveys already authorized will hereafter be conducted in such camps and with such frequency as may be deemed necessary by the Surgeon General. Bulletins and statistical information regarding nutritional surveys of military camps made by this division since last October will be furnished upon request by this office.

6. It is suggested that a nutrition officer should have desk room at your office, should be provided with clerical assistants, and with transportation for his inspection tours.

(*Memo. to Camp Surgeons, Surgeon General's Office, August 30, 1918.*)

INTERNAL MEDICINE.

Discharge of Pulmonary Tuberculosis Cases.

1. Attention is called to the telegram issued by The Adjutant General of the Army, as quoted below:

> Referring telegram April 9, 1918. Cases of pulmonary tuberculosis with negative sputum, usually of chronic fibrous type, may be fully reported to this office with a view to discharge on surgeon's certificate of disability.
>
> War Department, A. G. O., *July 1, 1918.* To the Surgeon General, who is instructed to issue the necessary orders to all within his jurisdiction.

2. Medical officers will be governed accordingly and it is directed that this information be communicated to all medical officers under your jurisdiction.

(*Letter to commanding officers of all base, general, and United States Army hospitals, Surgeon General's Office, July 11, 1918.*)

Discharge of Pulmonary Tuberculosis Patients.

1. Attention is invited to the following order issued by The Adjutant General to the commanding generals of all Regular Army, National Army, and National Guard camps; All department commanders; commanding officers of all recruit depots; Coast Artillery districts and commanding generals of ports of embarkation:

> Discharge no soldiers on account of pulmonary tuberculosis unless they desire discharge and the diagnosis is confirmed by positive sputum. Direct surgeons that cases of tuberculosis shall not be reported for transfer to special hospitals until the diagnosis is thoroughly established. Many cases of unresolved pneumonia and streptococcus bronchitis are being reported as tuberculosis.

2. You are directed to be governed accordingly.

(*Letter to commanding officers of all base and general hospitals, Surgeon General's Office, April 15, 1918.*)

Clinical Aspect of Uncomplicated Influenza.

1. Official reports received from the various camps have dealt mainly with the epidemiology and bacteriology of the recent epidemic of influenza. It is now desired to obtain a composite photograph of the strictly clinical picture of uncomplicated influenza as it exists in the minds of experienced medical chiefs. It is believed that this object may be attained by relying upon the experience and general impressions of the medical officers directly concerned with the care of patients during the epidemic.

2. As elaborate statistics are not required for an inquiry of this character, a questionnaire, prepared in such manner as to minimize the work needed, is inclosed. It is directed that this be filled in by the chief of service, or under his direct supervision, and promptly returned to the Surgeon General, Division of Internal Medicine.

3. If there have been such radical changes in the medical personnel of the hospital since the epidemic as to render this form of report of doubtful value, the commanding officer should immediately communicate that fact, with particulars, to this office.

This questionnaire relates solely to uncomplicated cases of influenza.

Indicate your estimate of the incidence of various symptoms by use of the following letter symbols, or equivalent per cent figures:

C=Common =80 to 90 per cent.
F=Frequent =50 to 70 per cent.
I =Infrequent= 20 to 40 per cent.
R=Rare =0 to 10 per cent.

1. Period of incubation (any opinion, based on facts, as to the usual length of)
2. Onset:

Abrupt		Prostration	
Chilliness		Sneezing	
Rigor		Sore throat	
Headache		Irritative cough	
Backache		Joint pains	
Abdominal pain			

3. Fever (duration in uncomplicated cases)

Type.—Classify, if possible

4. Respiratory symptoms (in cases uncomplicated by pneumonia):

Cough		Bronchitis, signs of	
Hoarseness		Sputum	
Dyspnea		Hemoptysis	
Coryza		Lost sense of smell	

5. Circulatory symptoms (in cases not complicated by pneumonia):

Pulse rate, average		Dyspnea	
Cardiac arrhythmias		Epistaxis	
Cyanosis		Bleeding gums	

6. Nervous symptoms (in cases uncomplicated by pneumonia):

Pain.—Location and character—

Headache		Delirium	
Insomnia		Meningismus	
Somnolence			

7. Gastrointestinal symptoms:

Nausea		Tongue, swollen papillæ	
Vomiting		Pharynx, congested	
Diarrhea		Lost sense of taste	
Marked constipation		Frequency of cases with predominating gastrointestinal symptoms	
Abdominal pain			

8. Cutaneous manifestations:

Hyperesthesia		Erythema (toxic)	
Petechiæ		Jaundice	
Purpuric spots		Pruritus	
Sweating			

9. Eye:

Photophobia		Injected conjunctivæ	

10. Ear:

Tinnitus		Impairment of hearing	
Hyperacusia		Earache	

11. Genitourinary symptoms:

Hematuria		Irritable bladder	
Cylindruria		Pyelitis, simple	
Albuminuria			

12. Convalescence (uncomplicated cases):

Rapid		Slow	

Persistence of special symptoms, especially—

Muscular weakness		Symptoms referable to the nervous system	
Cardiac disturbances			

13. Symptoms of interest or importance observed in addition to those preceding:

14. Enter below any comment, or detail, regarding special symptoms; or any information you may be able to offer concerning the clinical picture, or the differential diagnosis, of uncomplicated influenza.

(*Cir. Letter No. 36, Surgeon General's Office, January 18, 1919.*)

Regulations Regarding the Transportation of Persons Suffering from Tuberculosis.

The following is quoted from Interstate Quarantine Regulations of the United States, published by the United States Public Health Service, 1916, with reference to the transportation of persons suffering from pulmonary tuberculosis:

> SECTION 28. Common carriers shall not receive for interstate transportation any person known by them to be suffering from pulmonary tuberculosis in a communicable stage unless said person is provided with the following articles:
>
> (*a*) (1) A sputum cup made of impervious material and so arranged or constructed to admit of being tightly closed when not in use.
>
> (2) A sufficient supply of handkerchiefs, gauze or similar articles of sufficient size to cover the nose and mouth while coughing and sneezing. Said handkerchiefs, gauze, or similar articles shall be inclosed in a tight container after use and shall be destroyed by burning.
>
> (3) All sputum and nasal discharges from the patient shall be received in gauze or paper, which shall be deposited in a closed container and which shall be destroyed by burning or received in a 5 per cent solution of carbolic acid or disinfecting fluid of equivalent disinfecting value placed in a covered vessel and allowed to stand undisturbed for at least two hours after the last addition thereto.
>
> (*b*) Immediately upon the disembarkation of the patient the common carrier shall close the compartment the patient has vacated, without the removal of any of its contents, and shall keep the same closed until disinfection.
>
> (*c*) Passengers in interstate traffic having pulmonary tuberculosis in a communicable stage shall not expectorate except in the sputum cup or gauze aforementioned.

Responsible medical officers will require strict compliance with the restrictions above quoted in transference of soldiers suffering from pulmonary tuberculosis from one hospital or station to another.

(*Cir. Letter No. 44, Surgeon Generals Office, January 21, 1919.*)

Personnel of Medical Services.

1. It is desired to obtain further information regarding the professional qualifications of officers serving on the medical services of hospitals. For this purpose it is requested that the chief of the medical service be instructed to fill out the inclosed questionnaire and return it to this office, attention Division of Medicine.

OFFICE OF SURGEON GENERAL (attention Colonel Conner).

PERSONNEL OF MEDICAL SERVICE.

Hospital ....

Date ....

1. Name of chief of medical service ....

2. Names and rank of all medical officers at present serving in medical services, to be classified as follows:

A. All officers serving as chief of medical services or qualified to serve as chief of medical service.

Name.	Rank.	State in this column any special qualifications in— (*a*) Cardiovascular diseases. (*b*) Tuberculosis. (*c*) Gastrointestinal diseases. (*d*) Serum therapy of pneumonia. (*e*) Serum therapy of meningitis. (*f*) Neurology and psychiatry. (*g*) Dermatology. (*h*) Contagious diseases.

B. All officers especially qualified in internal medicine. These should be familiar with modern methods of diagnosis, intraspinous and intravenous therapy, etc., and fully competent to assume entire charge of professional care of the sick.

Name.	Rank.	State in this column any special qualifications in— (*a*) Cardiovascular diseases. (*b*) Tuberculosis. (*c*) Gastrointestinal diseases. (*d*) Serum therapy of pneumonia. (*e*) Serum therapy of meningitis. (*f*) Neurology and psychiatry. (*g*) Dermatology. (*h*) Contagious diseases.

C–1. All officers not to be classified as specialists in internal medicine but especially valuable as ward surgeons. Should include officers satisfactory for base hospital duty but not well qualified physically for field duty.

Name.	Rank.	Remarks (state any special qualifications).

C–2. All officers capable of satisfactory service as ward surgeons but physically qualified for field duty and not especially desirable for base hospital duty.

Name.	Rank.	Remarks (give recommendations in regard to disposition of services).

D. All officers not qualified for further service in internal medicine.

Name.	Rank.	Remarks (give recommendations concerning disposition of services).
....	....	....
....	....	....
....	....	....
....	....	....
....	....	....
....	....	....

3. What is the approximate number of patients on the medical service at present..........

4. Under present conditions, what is the niminum number of officers required to satisfactorily man the medical service..

5. How many officers can be spared for duty at the present time........................

6. Remarks and recommendations concerning personnel..................................

....

....

....

Chief of Medical Service.

Approved.

....

Commanding Officer.

(*Cir. Letter No. 74, Surgeon General's Office, February 5, 1919.*)

PSYCHOLOGY.

Future Psychological Service.

1. This office is in need of immediate advice concerning your future relations to civilian and military psychological service.

2. Answers are desired on the following specific questions:

(1) Are your services urgently needed by academic or other institution so that as soon as feasible you should return.

(2) If not, it is quite possible that, in accordance with indicated preference, you may shortly be used in connection with educational psychological service in general hospitals, Division of Physical Reconstruction, in morale work, or in some other line of psychological military service.

3. Prompt reply will facilitate action in this office and avoid injustices to institutions as well as to individuals.

(*Cir. Letter to the chief psychological examiner, Camp*...........(*through the camp surgeon*), *Surgeon General's Office. Undated.*)

Psychological Report.

1. Cancellation of draft call should render possible certain special psychological service which will be of assistance to this office. You are directed to complete, as rapidly as camp service permits, and to forward to this office reports of all special studies or investigations now in progress.

2. Score distributions for various arms of the service and for typical units or military groups are urgently needed and should be reported in accordance with previous instructions as soon as available.

3. It is desirable that report be made of typical cases or incidents which strikingly illustrate the military values of mental ratings. The reports should be accurate in every detail but brief. A meeting of the psychological staff is suggested for the purpose of gathering material of this sort.

4. Available time may be profitably devoted to special studies concerning the military values of intelligence ratings. It is particularly desirable to compare the scores of men with officers' estimates of their intelligence (note that intelligence is mentioned, not general military value, as in an earlier study). Comparisons are also desired of officers' scores with the estimates of their intelligence supplied by superior officers who are intimately acquainted with them. Such estimates ordinarily have value only if made with extreme care by a superior officer.

5. All individual psychological record cards for men examined in your camp should be held for the present for such special use as you may be able to make of them. If they are not needed

they should be securely packed, after being properly labeled, and shipped to this office by express, attention Division of Psychology. In any event these cards should without fail be forwarded to this office before psychological service is discontinued in your camp.

(*Letter to the chief psychological examiner* (*through camp surgeon*), *Surgeon General's Office, November 16, 1918.*)

Shipment of Individual Psychological Record Cards.

1. In order that psychological report on every soldier examined may be available in this office, you are instructed, before you leave your present station, to securely pack, properly label, and ship by express to the Office of the Surgeon General, Seventh and B Streets, Washington, D. C., attention Division of Psychology, all individual record cards accumulated during your camp examining.

2. There is no immediate need for these records in this office, and these instructions are given merely to assure shipment before psychological service is discontinued in your camp.

3. If used record blanks—Alpha, Beta, or individual—are desired by this office, you will shortly receive special shipping instructions, otherwise before you leave your station see that the blanks are destroyed either by reduction to pulp or by fire.

(*Letter to the chief psychological examiner* (*through camp surgeon*), *Surgeon General's Office, November 18, 1918.*)

NEUROLOGY AND PSYCHIATRY.

Disposition of Civilian Insane.

1. The following decision of The Acting Judge Advocate General is published for information of all concerned:

[4th ind.]

GDG/CRB.
JAG 046.3–046.311 Misc. Div.
War Department, J. A. G. O., June 4, 1918.
To The Adjutant General.

1. By the preceding indorsement is submitted the question whether insane civilian employees of Government contractors upon their arrival from overseas can be transferred for treatment to Government hospitals for the insane the same as enlisted men are so transferred.

2. By the papers in reference it appears that there are no proper accommodations to enable the authorities to care for such cases at the ports of embarkation hospitals, and the suggestion is made that such insane civilian employees be transferred to the St. Elizabeths Hospital, Washington, D. C., until final and due disposition may be made of their cases.

3. It is provided in Army Regulations No. 464 that—

"(1) Officers, contract surgeons, and enlisted men of the Army who have become insane while in the military service or within three months after their discharge therefrom, from causes which arose during and were incident to such service; (2) inmates of the Soldiers' Home and of the National Home for Disabled Volunteer Soldiers; (3) civilian employees of the Quartermaster Corps who may become insane during such employment; (4) general prisoners; (5) interned persons and prisoners of war, under jurisdiction of the war Department who are or may become insane."

It will be observed that the only class of civilian employees eligible to be sent to St. Elizabeths Hospital are those of the Quartermaster Corps. There is no mention whatever of employees of contractors. The question, therefore, arises: Can a civilian employee of a person occupying a mere contractual relationship with the United States be sent upon his arrival from overseas in the United States to a Government hospital erected and maintained for governmental purposes? The purposes for which such hospitals are maintained are explicitly defined in Army Regulations 464, supra, and clearly there would be no authority to send to and maintain in such hospitals any person not coming within the classes there enumerated. A civilian employee of the Quartermaster Corps occupies necessarily with the Government a very different position from that occupied by the employee of a civilian contractor standing merely in a contractual relationship with the Government. Essentially a contractor is one who enters into a contract, but the term is used generally to define those who undertake to do public work or to do work on a large scale at a fixed or ascertained price. As a rule his acts and his contracts are his own and for them he and not his employer is responsible. An independent contractor is thus defined in Bouvier's Law Dictionary, volume 2, page 1533:

"One who exercises an independent employment and contracts to do a piece of work according to his own methods and without being subject to the control of his employer, except as to the result of his work."

4. As defined, a contractor is one who engages in public works and employs and controls the action of his workmen free from the control and direction of his employer. In a word, the relation means that choice of means and methods are left to the contractor. It implies an absence of general control and management on the part of the employer. Again, it is of the very essence of the rela-

tion that such a contractor has no authority to employ servants or agents for his employer. He must accomplish the result stipulated for by the employment of his own agents, and he, not his employer, is liable for their acts and solely responsible to them for any default or neglect attaching to their status. Obviously, therefore, a civilian employee of one who contracts to do work for the United States Government is in no sense under the direction and control of the United States, but is the servant or employee of the contractor and as such is, as far as the contract is concerned, exclusively under the direction and control of the person by whom he is employed.

5. I am, therefore, of the opinion that a civilian employee of one having merely contractual relations with the United States is in no respect a servant or employee of the United States Government, and that in the absence of a law or regulation permitting it, no authority exists, even in the event of insanity, to transfer any such employee to the St. Elizabeths Hospital for the Insane in Washington, D. C.

James J. Mayes,
Acting Judge Advocate General.

2. Efforts should be made by commanding officers to discharge insane civilian employees not entitled to treatment in Government hospital into the custody of relatives or civil authorities of their home town. If for any reason this is impracticable, a full report of each case will be furnished this office.

(*Letter to commanding officers, base and general hospitals, and surgeons, ports of embarkation, Surgeon General's Office, June 12, 1918.*)

Disposal of the Insane.

1. Members of the Military Establishment suffering from general paralysis of the insane and from insanity complicated by epilepsy (insane epileptics) shall be sent from hospitals at ports of embarkation and from other hospitals to St. Elizabeths Hospital, Washington, D. C., as provided by paragraph 464, Army Regulations, 1913, as amended by C. A. R. No. 64, December 13, 1917.

2. All other patients in the military service who present symptoms of insanity shall be retained in the military hospitals for necessary care and treatment, provided the period of care and treatment shall not exceed four months.

3. All cases of epilepsy which can not be improved by medical or surgical treatment in the military hospitals shall be recommended for immediate discharge from the service without transfer to other military hospitals.

(*Cir. Letter, Surgeon General's Office, November 20, 1918.*)

Disposition of Insane.

1. Under Special Regulations No. 65, W. D., 1918, governing standards for acceptance for service in the Army, either by voluntary enlistment or by draft, the fact that an applicant has been an inmate of an institution on account of insanity is a bar to that applicant's acceptance for service. It has been brought to the attention of this office that soldiers in Army special hospitals for the treatment of the insane who have apparently recovered from insanity are being returned to duty in some instances and sent to demobilization camps for discharge. If such men are discharged while on duty status, there will be no notation made on discharge papers showing that the soldier had been under treatment in military hospital for insanity during his service.

2. It is the view of this office that a soldier in whose case a definite diagnosis has been made by competent authority of the following conditions, namely:

(1) General paralysis,
(2) Psychoses with cerebral syphilis,
(3) Psychoses with pellagra,
(4) Manic-depressive psychoses,
(5) Dementia præcox,
(6) Paranoid and paranoic conditions,
(7) Psychoses with mental deficiency,
(8) Psychoses with constitutional psychopathic inferiority,
(9) Epileptic psychoses,
(10) Undiagnosed psychoses,
(11) Drug addiction (specify drug),
(12) Constitutional psychopathic state,

should be held unfit for military service, regardless of any subsequent improvement or apparent cure under treatment. In the disposition of such cases at your hospital, when recovered to a degree warranting a release on the soldier's own responsibility, he should be recommended for discharge on Form 17, A. G. O.

(*Cir. Letter No. 95, Surgeon General's Office, February 19, 1919.*)

Disposition of Insane.

1. In order to secure more uniformity in disposing of insane in accordance with Army Regulations, and prevent cases being transferred to St. Elizabeths Hospital until it is demonstrated that they are either incurable or will require a long period of treatment, the following instructions will be followed:

2. Patients may be recommended for transfer to St. Elizabeths Hospital after a period of four months' observation and treatment in military hospitals in the United States designated for the reception of these cases. Exception may be made of well-defined cases of paresis, insane epileptics, or violent cases in which the prognosis is poor, and are unable to be safely cared for in military hospitals. Patients will be transferred to St. Elizabeths Hospital strictly in accordance with Army Regulations governing such transfers after all papers have been completed and forwarded through proper channels and authority obtained in each case.

3. In cases transferred to St. Elizabeths Hospital, an extra copy of the history, other than that forwarded through proper channels as called for in Army Regulations, will be sent direct to the superintendent of St. Elizabeths Hospital with the patient.

4. General Hospital No. 13, Dansville, N. Y., will receive only mild cases suitable for treatment in open wards.

5. Army Regulations regarding transfer of valuables will be strictly observed.

6. Copies of revised list of States and the proper persons designated to communicate with regarding their reception, as contemplated in paragraph 470 of Army Regulations as amended, are inclosed.

FEBRUARY 20, 1919.

STATE CARE OF INSANE SOLDIERS.

[Subject to amendments and additions.]

This list supersedes list of July 16, 1918.

Authorities of the starred States have signified their willingness to receive, care for, and maintain at State expense soldiers from their own States who require institution care when the insanity existed prior to enlistment. No patient will be sent to any of the State institutions without assurance having been obtained from the State authorities that beds are available and without the exact point having been indicated to which the patient shall be delivered by the military authorities. In those States unstarred, communication with the authorities indicated will secure action.

Alabama.—Communicate with judge of probate of county where soldier resided before enlistment. If county not known, communicate with governor at Montgomery, giving place of residence if possible.

**Arizona.*—Communicate with medical superintendent, Arizona State Hospital, Phoenix, Ariz.

Arkansas.—Communicate with State board of control of charitable institutions, Little Rock, Ark.

**Colorado.*—Communicate with medical superintendent, Colorado State Hospital, Pueblo, Colo., giving county where soldier was enlisted.

**Connecticut.*—Communicate with medical superintendent, Connecticut Hospital for Insane, Middletown, Conn.

**Delaware.*—Communicate with medical superintendent, State Hospital for Insane, Farnhurst, Del.

**Florida.*—Communicate with the secretary of the board of State institutions, Tallahassee, Fla., giving county where soldier was enlisted.

**Idaho.*—Communicate with medical superintendent, Idaho Insane Asylum, Blackfoot, Idaho.

**Illinois.*—Communicate with superintendent of charities, department of public welfare, Springfield, Ill., who will designate proper State institution.

**Indiana.*—Communicate with secretary, State board of charities, Indianapolis, Ind., who will designate proper State institution.

**Iowa.*—Communicate with medical superintendent of any of the following State hospitals: Cherokee State Hospital, Cherokee; Clarinda State Hospital, Clarinda; Independence State Hospital, Independence; Mount Pleasant State Hospital, Mount Pleasant; State Reformatory, Anamosa.

**Kansas.*—Communicate with secretary of the board of educational, charitable, and correctional institutions, Topeka, Kans., who will designate proper State institution.

Kentucky.—Communicate with attorney general's department, Frankfort, Ky., giving county where soldier was enlisted.

**Louisiana.*—Communicate with medical superintendent of either of the following State hospitals: State Hospital for the Insane, Jackson, La.; State Hospital for the Insane, Pineville, La.

**Maine.*—Communicate with the medical superintendent of either of the following State hospitals: Bangor State Hospital, Bangor, Me.; Augusta State Hospital, Augusta, Me.

**Maryland.*—Communicate with the secretary of the lunacy commission, 330 North Charles Street, Baltimore, Md., who will designate proper State institution.

**Massachusetts.*—Communicate with medical superintendent, Boston Psychopathic Hospital, Boston, Mass.

**Michigan.*—Communicate with attorney general's department, Lansing, Mich., who will designate proper State institution.

**Mississippi.*—Communicate with medical superintendent, State Hospital for the Insane, Jackson, Miss.

**Missouri.*—Communicate with medical superintendent, State Hospital No. 1, Fulton, Mo.

**Montana.*—Communicate with medical superintendent, State Hospital, Warm Springs, Mont.

**Nebraska.*—Communicate with secretary, board of commissions of State institutions, Lincoln, Nebr., who will designate proper State institution.

**Nevada.*—Communicate with secretary of commission for the care of indigent insane, Carson City, Nev., who will designate proper State institution.

**New Hampshire.*—Communicate with medical superintendent, New Hampshire State Hospital, Concord, N. H.

New Jersey.—Communicate with commissioner of charities and corrections, Trenton, N. J., who will designate proper State institution.

**New Mexico.*—Communicate with medical superintendent, New Mexico Insane Asylum, Las Vegas, N. Mex.

**New York.*—Communicate with the secretary, State hospital commission, Albany, N. Y.

**North Carolina.*—Communicate with medical superintendent, State hospital at Dix Hill, N. C.

**North Dakota.*—Communicate with chairman of the board of control, Bismarck, N. Dak., who will designate proper State institution.

**Ohio.*—Communicate with the secretary of the Ohio Board of Administration, Columbus, Ohio, who will designate the proper State institution.

**Oklahoma.*—Communicate with medical superintendent, East Oklahoma State Hospital, Vinita, Okla.

**Oregon.*—Send insane soldiers to State institutions as follows: Those from Baker, Crook, Gilliam, Grant, Harney, Hood River, Jefferson, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler Counties to be sent to medical superintendent, Eastern Oregon State Hospital, Pendleton, Oreg. Those from Benton, Clackamas, Clatsop, Columbia, Coos, Curry, Douglas, Jackson, Josephine, Klamath, Lake, Linn, Lincoln, Lane, Marion, Multnomah, Polk, Tillamook, Washington, and Yamhill Counties to be sent to medical superintendent, Oregon State Hospital, Salem, Oreg.

**Pennsylvania.*—Communicate with secretary, committee on lunacy, Bulletin Building, Philadelphia, Pa., stating county where soldier enlisted.

**Rhode Island.*—Communicate with medical superintendent, State Hospital for Mental Diseases, Howard, R. I.

**South Carolina.*—Communicate with secretary of State board of charities and corrections, Palmetto Building, Columbia, S. C., who will give directions.

**Tennessee.*—Communicate with president of Tennessee Board of Control, Nashville, Tenn., who will designate the proper State institution.

Texas.—Communicate with medical superintendent, State Lunatic Asylum, Austin, Tex., who will give directions.

**Utah.*—Communicate with medical superintendent, State Mental Hospital, Provo, Utah.

**Vermont.*—Communicate with medical superintendent, State Hospital for Insane, Waterbury, Vt.

**Virginia.*—If white soldiers, communicate with J. M. Bauserman, commissioner of State hospitals, Woodstock, Va. If colored, communicate with Dr. William F. Drewry, superintendent, Central State Hospital, Petersburg, Va.

**Washington.*—Communicate with chairman, State board of control, Olympia, Wash., who will designate proper State institution.

**West Virginia.*—Communicate with president of State board of control, Charleston, W. Va., who will designate proper State institution.

**Wisconsin.*—Communicate with secretary, State board of control, Madison, Wis., who will designate proper institution.

**Wyoming.*—Communicate with medical superintendent, State Hospital for the Insane at Evanston, Wyo.

(*Cir. Letter No. 112, Surgeon General's Office, March 1, 1919.*)

History of Neuropsychiatry in the Army.

1. The history of neuropsychiatry in the United States Army is being prepared in this office.
2. Requested that the following information be furnished as soon as possible:

(*a*) Number of wards with total number of beds reserved for neuropsychiatric patients.

(*b*) Total number of neuropsychiatric patients treated from beginning to date.

(*c*) Table showing collectively diagnoses and final dispositions of neuropsychiatric patients from beginning to date.

(*d*) Detailed account of unusual or especially interesting cases, if any.

(*e*) An account of events or items of general interest.

(*f*) Any comments, suggestions, or criticisms in reference to the neuropsychiatric work.

3. Requested, if possible, that copies of photographs be sent of exterior and interior views of neuropsychiatric wards, of the staff of officers connected with same, of groups of patients in various activities, or of anything else in connection with neuropsychiatry.

4. Requested that above material be sent to this office, attention Contract Surgeon Pearce Bailey, Section of Neurology and Psychiatry.

(*Cir. Letter No. 149, Surgeon General's Office, March 24, 1919.*)

Neuropsychiatric Personnel.

1. It has been brought to the attention of this office that in some instances personnel exempted and especially trained for neuropsychiatric work have been used for other duties; for example, as mess officers, supply officers, or for medical duty having nothing to do with their specialty. A large portion of this personnel came from civilian institutions throughout the country and are greatly needed by these institutions. This office does not approve of the policy of retaining this personnel in the military service, except for work in their specialty. Furthermore, there is at times a very urgent need for this personnel, and it is with difficulty that these positions are filled.

2. It is directed that you report with the least practicable delay, attention Section of Neuropsychiatry, this office, the names and duties performed by each officer, nurse, and enlisted man especially trained in neuropsychiatry, who is not either caring for nervous and mental cases or on boards examining the command for nervous and mental diseases.

(*Cir. Letter No. 207, Surgeon General's Office, May 12, 1919.*)

Clinical Records of Insane Transferred to U. S. Public Health Service Hospitals.

1. The following request from the chief medical advisor, Bureau of War Risk Insurance, has been received in this office:

> It is respectfully requested that henceforth when men with mental disability are transferred from Army hospitals to the United States Public Health Service hospitals that an abstract of the clinical record accompany the case.

2. This is referred to you for compliance.

(*Cir. Letter No. 235, Surgeon General's Office, June 9, 1919.*)

Recruits Showing Mental Disease Shortly After Enlistment.

1. This office has noticed with some anxiety the increase in the number of cases of mental disease among enlisted men recently recruited.

2. Facilities for a careful psychiatric examination have been available at the recruit depots, disciplinary barracks, general hospitals, and demobilization camps, as well as at a number of smaller commands.

3. It is desired to obtain, as soon as possible, more detailed information on this subject in order that this condition may be corrected. A report without delay is requested, giving the following information:

(*a*) Names of enlisted men found to be insane who have been accepted for enlistment since recruiting began last spring.

(*b*) Diagnosis.

(*c*) Place where recruit was physically examined, and whether the recruit was examined by a psychiatrist, when this information is available locally.

4. Your opinion as to the cause of this increased number of patients among new recruits, and any new suggestions you may have to offer are desired.

(*Cir. Letter No. 316, Surgeon General's Office, October 6, 1919.*)

GENERAL SURGERY.

Surgical Service of Hospital.

1. It is the function of the Section of General Surgery of this office to recommend the detail to base hospitals of officers of the Medical Reserve Corps for duty on the surgical service. These will include a chief of service and five assistants for hospitals of 500 bed capacity, and a proportionate increase for larger hospitals. (The Sections of Surgery of the Head, Orthopedic Surgery, and of Genitourinary Surgery will make recommendation for the service of their specialties.)

2. Every effort will be made to select these men with care after the most thorough examination possible into their professional qualifications, taking into consideration the number available of surgeons composing the various groups, the efficiency of the Medical Department as a whole, and the hospital in particular. Balancing the staff is essential, i.e., not having several surgeons of approximately equal age, rank, and professional ability on a single service, with a waste of talent, some of which could be used to the greater good of the service elsewhere.

3. The arrangement of the surgeons should be about as follows:

(*a*) *Chief.*—A general surgeon of several (12–15) years' experience in active surgical work in hospitals; conspicuous by reason of skill and judgment.

(*b*) *Assistants.*—Two assistants with good hospital training and several (3–10) years' experience in general surgery. It is desirable, if possible, to have one of these men skilled in abdominal surgery, the second in fracture work. Either of these two men should be available later for chiefs of service.

(*c*) *Junior surgeons.*—Three junior surgeons of the grade of good hospital internes or preferably men who have been out of hospital one to three years.

4. With the personnel of a large number of hospitals to arrange for, the above grouping is very necessary.

5. In order to facilitate the grouping and detail of suitable surgeons to the various hospitals, it is desired that you forward to this office the names (with home town, State) of each Medical Reserve officer on the surgical staff of your hospital, arranged as nearly as practicable in conformity with the grouping outlined above. The forming of surgical teams is the object sought, and a report with recommendations by you on the capability and adaptability of those officers will be of service. A similar report each month is desired and should have the notation "Attention of Colonel Moncrief" appended.

6. It will probably be necessary to detail more officers to your general surgical staff than five. This will be done for the purpose of training these men during the next few months in the work of a military hospital with the object of withdrawing them (in groups when practicable) to form staffs for other hospitals as needed.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Recommendation of Medical Officers for Intensive Instruction.

1. It is directed that you select a medical officer who has had training in general surgery to be sent to a clinical center for intensive instruction in the treatment of fractures; first course, November 5 to December 1; second course, December 3 to 29. After completing this course, it is desired to return him to your hospital to act as a special instructor in the treatment of fractures and the application of splints adopted for use of the Army.

2. It is expected that a set of stock splints—typical forms which will be used for various fractures—will be furnished to each base hospital before this officer returns to you.

3. The name of this officer and the approximate date at which he will become available for assignment should be submitted to this office as early as practicable, attention of Col. William H. Moncrief.

(*Cir. Letter, Surgeon General's Office, October 17, 1917.*)

Instruction of Medical Officers.

1. It is the desire of the Division of Surgery to facilitate in every way possible the instruction of the medical officers assigned to the surgical service of the hospitals.

2. At most of the hospitals supernumerary staffs, complete or partially complete, are being assigned to duty to assist in the surgical (and other) work, and for the purpose of instruction in surgical and medico-military duties.

3. It is the purpose of this office to supply to the hospitals amplified material along the lines of the syllabus recently furnished, which will include abstracts of the latest literature on war surgery; special lectures will be prepared in this office for distribution; moving pictures and lantern slides will be furnished. It is expected that the lectures and demonstrations will be given by qualified members of the surgical staff, assigned by the commanding officer.

4. With the object of coordinating the instruction as far as possible, it is requested that the inclosed form be completed and returned to this office, attention Col. William H. Moncrief, at the earliest practicable date.

(*Cir. Letter, Surgeon General's Office, November 30, 1917.*)

Empyema Report.

1. Report by wire total number of cases of empyema now under treatment, the number of empyemas now being treated by surgical drainage, and the number of new cases diagnosed on day this report is rendered.

2. In future include number of new cases of empyema in daily telegraphic report of pneumonia and meningitis. This should not be construed to change the daily report of pneumonias. If a case has been reported as pneumonia and empyema afterwards develops, the empyema will be reported. If a case is admitted and diagnosed pneumonia and empyema, both the pneumonia and empyema will be reported.

(*Cir. Letter from the Surgeon General, April 1, 1918.*)

Empyema.

1. Owing to the large number of patients in camps suffering from empyema and streptococcus infections, the Surgeon General has instituted an intensive study of the problem. At the present time four teams, consisting of surgeons, bacteriologists, and internists, are investigating the question from every standpoint.

2. It is thought that in each camp where the number of cases is sufficient to justify its institution the commanding officer could form a local team consisting of a surgeon, bacteriologist, and an internist, comprising officers of ability and judgment, who will give practically all of their time to the subject, studying the question in all its phases, etiology, pathology, symptoms, diagnosis, and treatment. This would undoubtedly give the highest type of service to the patients and the combined reports of the groups working in the various camps, in conjunction with those obtained from the special commissions already instituted by the Surgeon General, may add something of permanent value to our knowledge of this subject.

3. It is recommended that such teams be formed by the commanding officer where the number of cases justifies it. If sufficient officers of proper qualifications are not available, request for them should be made through proper channels, but it is expected that you will secure the personnel from your present staff.

4. Where equipment for the study is not available, an emergency requisition should be made specifying that it is to be used in conjunction with this study of empyemas.

5. In compliance with this circular, report of progress should be made to the Surgeon General from time to time, giving date and the subject as empyema, so that any knowledge of value to other camps may be available for all. A final report should be sent on completion of the investigation. An immediate report is desired by the Surgeon General as to whether or not such a team has been formed in your hospital, and if so, the names of the members of the team.

6. Inclosed will be found:

(1) A summary of the data secured through the questionnaire recently submitted to the various camps.

(2) An outline of the course of the investigation now being carried on in one of the camps. It is desired that each group will initiate its own course of investigation, and the accompanying outline is sent only for your information.

EMPYEMA—OUTLINE OF STUDY.

Empyema:
  Problem—
    A. Etiology, pathology, clinical course, treatment, prognosis, method of prevention of empyema.
    B. Immediate aid to the empyema cases in the service.
    C. Ultimate permanent addition to our knowledge of this type of epidemic.
  Stages—Empyema—
    I. Early stage. At the time of earliest sign of fluid in the pleural cavity.
    II. Stage following primary drainage to stage of fibrosis and permanent cavity formation.
    III. Cavity formation with definite walls and tendency not to repair.

Method of approach:
- Immediate line of procedure—
  1. Secure complete history and physical examination of each case, to be comprehensive and accurate for basis of work and permanent record. Incidentally prepare charts for this work to be used by those interested.
  2. Place cases on specific lines of treatment and control results bacteriologically and physically—
     - x cases on Dichlor.
     - y cases on Dakin.
     - z cases on flutter valve.
     - x' cases on continuous aspiration, etc.
  3. Classify all cases as to etiology, sites of drainage, day of operation, in relation to onset, type of operation, blood culture, temperature, pulse, organism, etc., in relation to course and prognosis.
  4. Begin animal study of organism in relation to specificity and in relation to pathological lesion in lung.
  5. Begin careful histologic study of pathological material. (If necessary, material can be sent to the Army Medical School for examination.)
  6. Study of flora of discharge.
  7. Blood culture in each case.
- Specific study of physical condition $\left\{\begin{array}{l}\text{antemortem.}\\ \text{postmortem.}\end{array}\right.$
  - A. General—
    1. Blood pressure.
    2. Blood culture.
    3. Blood counts.
    4. Studies on toxicity of blood serum on animals.
    5. Urine—stage of nephritis.
    6. Myocardial and endocardial change.
    7. Other serous surfaces.
  - B. Local—
    1. Condition of lung—
       - (*a*) Intra-alveolar condition.
       - (*b*) Interalveolar condition.
       - (*c*) Gross abscess.
    2. Condition of pleura—
       - Gross—thickness, character of tissue, mobility of walls.
       - Microscopic—
         - Histological change in pleura—
           - (*a*) Fibrinous.
           - (*b*) Fibrous.
    3. Condition of discharge—
       - (*a*) At time of operation.
       - (*b*) At various stages, both gross and microscopic.

Empyema—line of investigation:
- Surgical considerations—
  - A. Study of cause, method of development, etc.
  - B. Early stage and prophylaxis.
  - C. Stage of suppuration.
  - D. Stage of repair.
- B. Early stage and prophylaxis—Immediate—
  - When to operate—
    - After primary insult.
  - How to operate—
    - Aspiration.
    - Pleurotomy.
    - Costectomy.
- I. Aspiration—
  - (A) Aspiration alone.
  - (B) Aspiration repeated.
  - (C) Aspiration and injection.
- II. Pleurotomy—
  - (A) Site.
  - (B) Anesthesia.
  - (C) Type of tube—
    - Plain.
    - Flutter valve.

Empyema—line of investigation—Continued.
- III. Costectomy—
  - (A) Site.
  - (B) Anesthesia.
  - (C) Type of tube.
  - (D) Primary and secondary.
- C. Stage of suppuration—
  - 1. Antiseptics—Dakin.
    Dichlor.
    Others.
    - (*a*) Alone.
    - (*b*) Antiseptic with flushing.
    - (*c*) Relation of type of antiseptic to site of wound.
  - 2. Dressing without antiseptic—
    - (A) Simple drainage—
      - (1) At side.
      - (2) At back.
    - (B) With flutter tube—
      - (1) Alone.
      - (2) With forced intrapulmonary action.
      - (3) With posture (on side) drainage wound down.
  - 3. Complications—secondary foci—
    - (A) Same lung—
      - (1) Aspiration.
      - (2) Aspiration—bismuth paste and drainage.
    - (B) Other pleura.
    - (C) Other serous surfaces.
    - (D) Lung processes.
  - 4. Closure after sterilization.
  - 5. Time to withdraw tube.
  - 6. Aspiration under continuous negative pressure.
  - 7. Aspiration under intermittent negative pressure.
- D. Stage of repair—
  - 1. Increased intrapulmonary pressure; bottle blowing, etc.
  - 2. Aspiration continuous negative pressure.
  - 3. Closure of cavities by flaps.
  - 4. Closure of cavities chest wall—mobilization.
  - 5. Closure of cavities by decortication.
    NOTE.—The time to institute method. Character of pathology in relation to pleural walls.
  - 6. Injection of inert substances to obliterate; e. g., various pastes.

REPORT ON REPLIES TO QUESTIONNAIRE ON EMPYEMA OF FEBRUARY 21, 1918.

Section 1. Mortality:
- (*a*) General.
- (*b*) Average, with high and low figures.
- (*c*) Factors influencing mortality—
  Organism.
  Type of lung involvement, antecedent measles, etc.
- (*d*) Reasons for marked differences in mortality—
  Some consider as empyema conditions which others do not so consider.
  Difference of handling.

Section 2. Pathology and bacteriology:
- (*a*) General statement with particular reference to polyserositis and entrance through mouth and respiratory tract.
- (*b*) Characteristics of exudate.
- (*c*) Characteristics of lung involvement.
- (*d*) Other lesions.
- (*e*) Bacteriology.

Section 3. Precedent disease and clinical course:
- (*a*) Frequency after measles.
- (*b*) Occasionally after tonsil infections.
- (*c*) Bronchitis usually precedes.
- (*d*) Rapidity of onset and fulminant character of some cases.

Section 4. Diagnosis:
- (*a*) Diagnostic aspiration and physical diagnosis.
- (*b*) X-ray.

Section 5. Treatment:
- (*a*) Advisability of operation and when to operate.
- (*b*) Type of operation and anesthesia.
- (*c*) Antistreptococcus serum.
- (*d*) Postoperative use of continuous negative pressure.
- (*e*) Postoperative use of antiseptics.
- (*f*) Prophylaxis.

(*Cir. Letter, Surgeon General's Office, April 13, 1918.*)

Hernia.

1. As the return to duty status renders the soldier liable to detail for any and every duty unless retained on sick report by the regimental surgeon, and no option is allowed him with regard to postoperative care, no case of hernia operated upon should be returned to duty in less than six weeks, unless it is certain that the duty performed by the soldier is such as not to favor the return of the hernia.

(*Cir. Letter, Surgeon General's Office, April 15, 1918.*)

Re-use Knitted Gauze and Laundry Unit for Reclamation of Same.

1. With the object of securing a satisfactory and re-usable substitute for surgical gauze, re-use knitted gauze has been developed, and within a reasonable time an initial shipment will be issued your hospital, together with an electric washing machine and a unit of steam-heated drying forms for installation in the laundry building where steam and water attachments are available and the reclamation is to be conducted. Should your hospital be already equipped with an electric washing machine or a sterilizer washer, you are requested to promptly notify this office.

2. Re-use gauze, tubular in form, is made of high-grade cotton, selvedged, soft and highly absorptive. It is to be used in all surgical work exactly as woven gauze is now used, and is to be laundered, sterilized, and re-used indefinitely. The initial shipment will be provided in the following types:

- (*a*) Gauze packing, approximately 1 by 18 inches.
- (*b*) Sponge, approximately 2 by 2 inches.
- (*c*) Compress, approximately 4 by 4 inches.
- (*d*) Dressing pad, approximately 6 by 8 inches.
- (*e*) Absorbent pad, approximately 8 by 12 inches.
- (*f*) Absorbent pad, approximately 12 by 24 inches.
- (*g*) Abdominal roll, approximately 4 inches by 3 yards.
- (*h*) Head net for scalp and mastoid dressings.
- (*i*) Head and face mask for operating-room service.
- (*j*) Ward mask.

Additional shipments will be supplied in quantity and type designated by each hospital which will require for same through regular channels.

3. An acceptable method of removing blood and pus from soiled re-use gauze will be suggested in due time. The process of reclamation and sterilization will be under the direct supervision of the chief of the laboratory service in each hospital.

4. It is requested that this office be notified of the arrival of the initial shipment of re-use knitted gauze, steam-drying form unit, or electric washing machine. Full advice as to the installation of drying forms will accompany these forms, and detailed instructions as to the use and re-use of the gauze will be issued later from this office.

5. It is requested that receipt of this communication be acknowledged, together with information as to whether any effort is being made in your hospital at the present time to reclaim surgical dressings, and whether there is a laundry building or other available space (of dimensions not less than 10 by 12 feet) where steam and water are available. It is also desired to know what electric current (voltage, cycle, and phase) are available.

(*Cir. Letter, Surgeon General's Office, May 1, 1918.*)

Sterilizer Control.

1. A moderate supply of the "Diack sterilizer control" is available and a limited number will be issued your hospital in the near future.

2. It is not the intention that this control be used constantly or with each sterilization, but at intervals and with regard to the conservation of the supply.

3. In order that a proper record may be kept of the efficiency of each sterilizing unit, it is recommended that the control be used at regular selected intervals and at other times when circumstances indicate that a test is advisable.

(*Cir. Letter, Surgeon General's Office, May 29, 1918.*)

Surgical Teams.

1. The following extract of letter from chief surgeon, American Expeditionary Forces, France, is quoted for your information and guidance:

> The technique of modern war surgery demands that surgical work be performed by teams rather than by individual operators. The expediency and the beneficial results of locating these teams at formations near the front where wounded may be transferred to their hands within a few hours of the receipt of their injury, has been conclusively demonstrated. The personnel of these teams comprise the ablest and most experienced surgeons in the American Expeditionary Forces. Each team consists of:
>
> One operator.
> One assistant.
> One anesthetist.
> Two female nurses.
> Two Medical Department soldiers as orderlies.
>
> The formation and utilization of these surgical teams has rendered it possible to revolutionize the surgery of battle casualties, and the results achieved have meant the saving of many lives which heretofore would have been forfeited as an incident to the fortunes of war.

(*Cir. Letter, Surgeon General's Office, July 22, 1918.*)

Gastric and Duodenal Ulcer.

1. Pursuant to recent inquiry of the Division of Internal Medicine on the question of treatment of gastric and duodenal ulcers, the following is a plan adopted in this office:

(1) Utmost care should be taken before a diagnosis of gastric or duodenal ulcer is made, since in operating upon such cases the diagnosis is often not confirmed.

(2) If a diagnosis of gastric or duodenal ulcer has been made, a further differentiation should be made between an acute and a chronic ulcer.

(*a*) Acute and subacute ulcers, except in the presence of surgical emergency, should be treated medically.

(*b*) In chronic ulcer, where the history shows that the condition existed prior to entering the service, the patient should be placed under dietetic treatment, and be assigned to duty that he is able to perform; or, in more severe cases, be discharged on a surgeon's certificate of disability.

(*c*) Soldiers who have been in the service a number of years, and whose histories show that the ulcer began after entering the service, and that they have had recurring attacks, may be operated upon.

(*Cir. Letter, Surgeon General's Office, July 25, 1918.*)

Monthly Report of Operations.

1. To assist this office in giving proper consideration to the monthly report of operations, the slips 55K will be arranged in order of classifications, as given below, and securely fastened in three separate sections before forwarding, each section to be marked or stamped with the name of the hospital for proper identification.

1.

Operations on eye.
Mastoidectomy.
Paracentesis (drum).
Others on ear.
Submucous resection.
Adenoidectomy.
Tonsillectomy.
Other nose and throat.
Decompression and brain.
Other head.

2.

Thoracotomy.
Rib resection.
Other thorax.
Appendectomy.
Herniotomy.
Other abdomen.
Anus, rectum, and hemorrhoids.
Variocele.
Orchidectomy.
Circumcisions.
Other genitourinary.

3.

Plating and wiring.
Other bone and joint.
Other vascular.
Skin, cellular and lymphatic.
Muscles, tendons, and nerves.
Amputations.
Gunshot and stab wounds.
Other traumatisms.
Foreign bodies.
Tumors and cysts.
Miscellaneous.

(*Cir. Letter, Surgeon General's Office, September 4, 1918.*)

Elective Operations.

1. Until instructions to the contrary are issued, elective operations should not be performed for minor defects and diseases not incurred in line of duty.

(*Cir. Letter, Surgeon General's Office November 12, 1918.*)

Surgical Service.

1. The chief of the surgical service, as executive head of surgery in a base or general hospital, is charged with the responsibility of the administration of that service under the direction of the commanding officer. No detail of this administrative duty is of greater importance than the necessity for providing in every instance the highest qualified surgical aid to the sick soldier. In order to fulfill this obligation, the chief of the surgical service shall assign any particular patient to the properly qualified medical officer, irrespective of the fact that this officer in question may be the representative of one of the surgical specialties.

(*Cir. Letter, Surgeon General's Office, December 10, 1918.*)

Surgical Cases with Special Reference to Overseas Cases.

1. It is of great importance that overseas wounded should have the benefit of the highest degree of professional skill and experience in their treatment, to insure the best possible ultimate results, the greatest restoration of function, and the shortest convalescence.

2. The treatment of many of these conditions is properly a teamwork proposition, demanding cooperation of different special services; e. g., in peripheral nerve injuries, the neurologist, the surgeon, and the orthopedist; in fractures requiring secondary operation, the general surgeon and the orthopedist, etc.

3. The chief of surgical service must exercise great care and judgment in selecting the best men to care for each case or group of cases, being guided by the skill and experience of the surgeon and not by the special section to which he may be attached in making the distribution and assignment of cases. He must also insist upon consultations and cooperation of different services whereever it may benefit the individual case.

4. Special hospitals have been designated for the treatment of certain types of surgical cases e. g., amputations, peripheral nerve injuries, maxillofacial cases, etc., where special personnel and facilities for treatment are available. If cases so grouped in the list of hospitals designated for overseas cases sent out by the Hospital Division of this office (a copy of which is herewith inclosed) should by error be sent from the ports of debarkation to hospitals not listed to receive them, and not fully prepared with personnel, equipment, or special apparatus to give them the best possible treatment, notification should at once be sent to the Surgeon General, attention Hospital Division, stating the number and diagnoses of such cases and the date of their admission to the hospital.

5. The group of cases, including fractures, with healed or unhealed wounds, incomplete union; delayed union or nonunion, union with malposition, chronic osteomyelitis or bone sinuses, is a very large and important one, which must necessarily be widely distributed in general and base hospitals throughout the country.

Secondary operations on these cases should be done only by surgeons of skill and experience. It is the duty of the chief of surgical service to see that the best surgeon available is selected to care for these cases, as specified in paragraph 3.

6. Should any hospital receiving overseas wounded lack sufficient skilled personnel to care for the class of cases received, notification should at once be sent to the Surgeon General, attention Division of Surgery, so that additional personnel may be furnished or the transfer of these patients to other hospitals be effected.

7. On the duplications of Form 55K, which are sent to this office, attention Division of Surgery, will be stated whether the case is from overseas or not.

(*Cir. Letter No. 13, Surgeon General's Office, January 7, 1919.*)

Appliances for Patients.

1. Paragraph 229, Manual for the Medical Department, has been amended to read as follows (C. M. M. D., 10, December 2, 1918):

> Upon the discharge from the hospital of patients permanently disabled, they may retain the appliances then in their use which are necessary for their comfort and safety; and the accountable officer will drop the same from his next return of medical property, submitting a certificate explaining the circumstances as a voucher for so doing, to which will be appended the patient's receipt for the appliance.

2. Medical officers will apply the same to the issue of artificial limbs, trusses, and other appliances of a similar nature.

3. In applying this procedure, the term "discharge from the hospital" will be understood to include transfer to another hospital.

4. The certificate and receipt called for will be exhibited on Form 28, Medical Department, executed in triplicate, one number of which will be retained by the accountable officer, one filed with his return, and the third forwarded promptly to the Surgeon General. The certificate will be made on the face of the form. The soldier's receipt will be given in the lower right-hand corner, over his auotgraph signature, followed by his rank, organization, and identification number. A sample is attached hereto.

5. Metal splints and crutches furnished to patients discharged from hospital will not be subject to the foregoing, but for such issue will be considered expendable and be dropped as expended.

(*Cir. Letter No. 12, Surgeon General's Office, January 9, 1919.*)

Typhoid Carriers.

1. It is the policy of this office to collect, as far as practicable, all chronic carriers of the typhoid group in the Army, at the Walter Reed General Hospital, Washington, D. C., for observation and treatment. The names of all proved carriers will be sent to this office, attention Laboratory Division, with a request for authority to transfer them to the Walter Reed Hospital.

2. Special care should be taken to confirm the diagnosis of chronic carrier by repeated examinations, because a number of carriers have been reported on one positive finding which could not be confirmed later. If possible, in intestinal carriers the duodenal contents should be examined before the case is reported.

3. Several carriers have already been cured by removal of an infected kidney or gall-bladder.

(*Cir. Letter No. 64, Surgeon General's Office, February 1, 1919.*)

Fractures of Long Bones; Preventable Deformities.

1. In the treatment of fractures of the shaft of long bones, especially those associated with slow-healing, infected, open wounds, as in many overseas cases, special care must be exercised to prevent avoidable loss of function or deformities in adjacent joints.

2. In the application of splints, traction apparatus, plaster casts, or mechanical appliances of whatever kind employed to secure proper fixation and alignment of the fractured bone and to permit of the necessary dressings and care of unhealed wounds, the effect on the function of adjacent joints must never be lost sight of.

3. The preservation of complete or partial function must be aimed at wherever it is possible, and when this can not be attained, contractures or ankyloses in bad position must be prevented.

4. The same principles apply to the postoperative treatment after operations for nonunion, malunion, bone graft, chronic osteomyelitis, etc.

5. The chief of surgical service must see that the general surgical and orthopedic services cooperate to secure the best treatment and the best possible ultimate results in this difficult and important class of cases which form such a substantial percentage of the overseas wounded.

(*Cir. Letter No. 70, Surgeon General's Office, February 3, 1919.*)

Tetanus Antitoxin.

1. From reports that are appearing in the literature, it is evident that occasional cases of tetanus have developed following operations for gunshot injuries. Even where tetanus has previously been administered at the time of primary wounding, cases of so-called postseric tetanus have occurred at a later period.

2. Chiefs of surgical service and other operators will therefore see that 500 U. S. units of tetanus antitoxin are administered 48 hours before operation on old gunshot injuries. This specially applies to such conditions as peripheral nerve injuries, ununited fractures, malunited fractures, osteomyelitis, etc.

3. To avoid the dangers of hypersensitiveness, the patient should first be given a subcutaneous injection of 0.5 c. c. of serum diluted with 0.5 c. c. of salt solution, followed after five minutes by a second subcutaneous dose of 1 c. c. of serum, and 15 minutes later by a third subcutaneous dose

of 5 c. c. of serum. One hour later the intravenous injection of the full dose should be begun. Injections should always be made slowly with careful attention to the patient's condition, and the serum should be warm when injected.

4. Fear of anaphylaxis should never prevent the use of serum when indicated. Careful technic and slow administration will go far to avoid serious accidents of this nature.

(*Cir. Letter No. 94, Surgeon General's Office, February 12, 1919.*)

Survey of Empyema Cases.

1. You are requested to report to this office, attention Division of Surgery, all cases of empyema in the hospital which are not completely and permanently healed.

2. This report will be made by adding the following data to the report called for by Circular Letter No. 24:

Name of patient.	Ward.	Date first operation.	Date secondary operation.
....	....	....	....
....	....	....	....
....	....	....	....

3. The report called for above will be made on the report rendered on the 1st of each month only and not on that rendered on the 15th of the month.

(*Cir. Letter No. 93, Surgeon General's Office, February 14, 1919.*)

Surgical Services in Hospitals:

1. In order that the closest cooperation between the different sections of surgery in the Surgeon General's Office and in the hospitals may obtain, and in order that the Chief of the Division of Surgery in the Surgeon General's Office may at all times be fully conversant with the assignment of the important medical officer personnel of the different sections of the Division of Surgery, the following will govern:

2. The Chief of the Division of Surgery shall be notified of any change in the important personnel of the sections in the Surgeon General's Office and in the hospitals.

3. The appointment of chief of the surgical service in the hospitals and the chief of the sections shall be made by the Chief of the Division of Surgery in the Surgeon General's Office.

4. Any change in the appointment of the chief of a given section in a hospital shall be made by the Chief of the Division of Surgery in the Surgeon General's Office after consultation with the head of the special service in the Surgeon General's Office.

5. The chief of the surgical service in a hospital shall make no permanent change in the heads of sections in hospitals without the authority of the Chief of the Division of Surgery in the Surgeon General's Office.

6. The chief of the surgical service in the hospitals shall make no change in the duties of the personnel of the different sections without consultation with the chief of the special sections in the hospital.

7. The chief of a special section in a hospital shall have the right to communicate (through the commanding officer) directly with the Surgeon General's Office.

NOTE—The attention of the chiefs of surgical services is directed to Circular Letter No. 13.

(*Cir. Letter No. 104, Surgeon General's Office, February 26, 1919.*)

Survey of Fracture Cases.

1. It is desired to obtain accurate data concerning cases of fractures of long bones which can serve as a basis for a statistical study of this difficult and important class of cases for immediate use and for the history of the war. To facilitate the collection of data, blanks are herewith sent.

2. It is requested that a competent officer of the surgical service be assigned to fill out these blanks for all cases under treatment as speedily as possible and return them to the Surgeon General, attention Division of Surgery. In future, as soon as a patient with fracture of a long bone enters the hospital, a blank will be filled out and at once sent to the Division of Surgery.

FRACTURES—LONG BONES.

....
(Surname of patient.) (Christian name.) (Age.)

Rank .... Org ....
Home address ....
Bone, name of .... R. L. Head. Neck. Up Mid. Low. Third, Int. Ext. Cond. Mall. Involv. Joint.
Form of fracture: Trans. Obl. Spiral. Commin. Loss of substance.
State of union: None. Begin. Fibrous. Firm. Sinus. Sequestra.
Wound, soft parts healed: Yes. No.
Discharge: Slt. Mod. Profuse.
Osteomyelitis: Yes. No.
Deformity: Bowing. Ant. Post. Out. Inward. Shortening ——— cm.
Function of joints: None. Limited. Free.
Nerve complication: Yes. No.
In bed: Yes. No. Using crutches: Yes. No.
Treatment present ....
Kind of splint: Thomas. Hodgen. Plaster. Internal fixation wire. Plate. Band.
Date last X-ray ....
Date injury .... Date report ....
When can he be discharged? ....
Will he be fully able to do his former work? Yes. No.
Occupation before war ....
Check terms, drawing line through those not applicable.
Hospital reporting ....
Officer reporting ....

(*Cir. Letter No. 117, Surgeon General's Office, March 4, 1919.*)

Treatment of Infected Wounds by Zinc Chloride Method.

1. The following will be brought to the attention of the chief of surgical service of your hospital:

(1) It is considered advisable to issue a word of warning to chiefs of surgical service in reference to a method recently developed of sterilization of septic wounds by chloride of zinc. Serious consequences followed the use of this method in some instances where the latest improvements of the author were not followed. It therefore should not be used unless the operating surgeon is thoroughly familiar with and capable of following out the later improvement of this method developed by Col. Babcock since the first presentation of his paper on this subject.

(*Cir. Letter No. 285, Surgeon General's Office, August 18, 1919.*)

The Use of Gentian Violet in the Treatment of Infected Wounds.

1. The following article is quoted for the information and guidance of all concerned:

THE USE OF GENTIAN VIOLET IN THE TREATMENT OF INFECTED WOUNDS—REPORT ON CASES TREATED AT THE WALTER REED GENERAL HOSPITAL.

J. W. CHURCHMAN, M. D.

In the following five groups of cases the attempt has been made at the Walter Reed General Hospital to apply to the treatment of infected wounds the findings as to the selective bacteriastatic properties of gentian violet first published by me in 1912, and since that time the subject of continued laboratory study.

I. *Amputation stumps which have become diphtheria carriers.*—As the diphtheria bacillus is gram-positive, and is therefore killed by gentian violet, as it will not grow in media containing minute amounts of gentian violet, and as the organisms when observed in a hanging drop to which gentian violet has been added take up the stain with great avidity (in contrast to the gram-negative organism which, in a hanging drop, stain poorly and slowly), there was good reason to hope that something might be accomplished toward killing out the diphtheria bacillus in these wounds. The persistence of the dye when applied in strong solutions to granulations, and its power of penetrating below the surface, made it seem likely that even if the organisms were not actually stained, the presence of the dye in the tissues would make the soil extremely uncongenial for their growth. The following technique was observed:

(*a*) Dressings were done daily.

(*b*) The skin about the wound was cleansed with great care with benzene, followed by neutral soap.

(*c*) The granulating surface was cleansed by rubbing gently with neutral soap, drying, and then flooding several times with hydrogen peroxide.

To this procedure great care was given, the foaming hydrogen peroxide being repeatedly wiped off with a dry gauze, until all removable material had disappeared. Minute pockets were thus cleaned, much as a dentist cleans the pockets about the gums, and special attention was given to the space under the skin edge where secretions and bacteria are likely to accumulate. The surface was then dried by mopping with dry gauze.

(*d*) With a camel's hair brush, which had been boiled and kept in 50 per cent alcohol, the cleaned granulating surface was painted with a saturated aqueous solution of gentian violet. This application was thoroughly made, particular attention being given to the space just under the skin edge. The first application was allowed to dry for a minute and a second coat applied. The dye caused no pain, burning, or other sensation. After the second coat had dried for a minute, a dry dressing was applied. The granulating surface was still somewhat stained 24 hours after the first dressing; at the end of three or four days' dressing it became quite deeply stained and remained so for three or four days, even if no further application of dye were made.

Two cases were treated in this manner. Both were severe tests, as they had been carriers for some time and had been treated, without avail, with diphtheria antitoxin, Dakin's solution, argyrol crystals, tincture of iodine, chromic acid, silver nitrate, etc.

Case 1—Neitering, ward 26.—A bad wound—diphtheria with membrane about four months ago. Membrane responded to antitoxin, but patient had been constant carrier since. Treatments were given daily July 21 to 25; culture negative for diphtheria July 21, 23, 24, 25, and 29. Transferred to ward 74. August 10, after letting wound go untouched for one week, cultures from wound negative for diphtheria.

Case 2—Yandell, ward 26.—A constant carrier since July 2. Culture made July 26, positive for diphtheria. Treatment given July 26, 27, 28, and 29; culture July 30, positive for diphtheria; daily treatments July 31 to August 9; cultures made August 5, 7, 8, 9, and 12, negative for diphtheria.

Transfer delayed by erysipelatoid rash in upper thigh 5 inches away from wound, which appeared suddenly with constitutional symptoms and subsided in three days. Cultures made from the skin showed a coccus, no diphtheria bacilli. Transferred to ward 74.

These cases were regarded as sterile for diphtheria only after the following technique had been followed:

(*a*) Four negative cultures on successive days. Cultures made 24 hours after last treatment. Material for cultures taken from granulating surface, and also from blood serum obtained by rubbing the superficial granulations away.

(*b*) Fifth negative culture, obtained (in the same manner) after the wound had gone untouched for four days and the secretions allowed to accumulate on the surface. The cultures were made on Lœffler's medium; after 24 hours' incubation this was enriched by pouring over its surface dextrose broth; and from this broth after 24 hours' incubation transplants were again made on to Lœffler's media.

II. *Amputation stumps.*—The indication for attempting to use the gentian violet in these cases were the mechanical difficulties in the use of the Dakin-Carrel technique (particularly where traction was necessary) and the irritation of the skin so frequent in these cases. Three groups of cases were treated. The technique followed was similar to that described for the diphtheria stumps.

A. Simple granulating wound:

I. Sebastian, ward 74.—Skin in bad shape and Dakin's solution impossible to use. Granulations readily sterilized; soon became red and healthy; skin in good condition, easily strapped, and wound is apparently going to heal completely.

II. Neitering.—Transferred from ward 26 as a cured diphtheria carrier.

III. Campbell.—A conical stump impossible to Dakinize, and skin will not stand the solution. Granulations are now healthy; wound is strapped and is closing rapidly.

B. Granulating wound with dermatitis:

I. Darlington, ward 74.—This was a very obstinate case; the wound was sluggish and the skin about it the site of an ugly dermatitis with crusts, which had defied all treatment. Wound is now clean. The wound is healing in rapidly from both ends, the skin has become almost normal, strapping is possible, and no further operative intervention will be necessary.

C. Granulating wound prepared for closure:

I. O'Connor, ward 73.—This case had had a long hospital career, with several operations, always complicated by marked sepsis. The skin would not tolerate Dakin's solution.

A preliminary operation had been recently done, flaps cut for closure, and the wound left wide open. Under gentian violet treatment healthy granulations sprang up throughout the wound with great rapidity; these in three weeks time had covered the bone end and reduced the wound to a space of about 2½ by 1½ inches. It was impossible completely to sterilize it, a few colonies of a gram-negative bacillus (*B. coli*) always appearing on the plate. On August 15, however, a plastic closure was done.

The skin suture was satisfactory except for about 1 inch at the center of the wound, where infolding made good approximation impossible. Convalescence uneventful. Healing per primam for about seven-eighths of wound. The center one-eighth (where approximation had been poor) separated slightly about the sixth day, and these edges are now held together by straps for a length of about 1 inch. There has doubtless been a mild infection in the subcutaneous tissues, but so much of the healing has been per primam that an excellent stump will be obtained and in a very short time.

III. *Empyema.*—As the problem in these cases is one of mechanics rather than disinfection, there has been no particular reason for using gentian violet except in the cases which could not bear Dakin's and in the cases where the wound was a sinus rather than a cavity.

(*a*) *Cases with cavity—Flagg, Lippmann, Parkey, Garrison, ward 13.*—All these cases have done well, notably Flagg, but as a collapsing operation is necessary in all it can not be said that the gentian violet technique has contributed much of value. The skin is in excellent shape in all of them and they have certainly done as well from the clinical standpoint as the Dakinized cases; and the technique besides being painless (in marked contrast to the Dakin technique) is much less elaborate and therefore more timesaving.

(*b*) *Cases with sinus—Powers, Adams, Pease, and Hoffman, ward 13.*—These cases presented no particular problem, and the treatment and course followed that described for the granulating wounds of amputation stumps. All promise to close soon.

IV. *Gingivitis due to the organism of Vincent's angina.*—A number of these cases have been treated in the dental clinic by Major Butler. He is enthusiastic about the results; but as the control in these cases is clinical and can not be bacteriological one must accept this enthusiasm with caution.

There is no good reason, however, why the use of this dye, always preceded by the most careful mechanical cleansing, should not be of use in this condition as well as in pyorrhea alveolaris.

V. *Joints.*—No suitable joints have presented for treatment. One patient (Moore, ward 19) was aspirated by the method recently described by me; but this was largely for diagnostic purposes, as no fluid could be obtained by the ordinary method. The case was a rare one of primary tuberculosis of the synovial membrane, of long duration, and was in no way suited for treatment by lavage and staining. Operation was done.

* * * * * * *

This technique promises to be of use in:

(*a*) Wounds which have become diphtheria carriers.

(*b*) Granulating wounds unsuitable for Dakins (e. g., amputation stumps requiring traction, or with irritated skin).

(*c*) Granulating wounds with surrounding dermatitis. Here the result seems to be due to a relative sterility produced by the dye, leading to secretions which are lessened in amount and decreased in irritating qualities.

(*d*) Gingivitis due to B. *fusiformis.*

The dye is a much less reliable antiseptic than Dakin's solution so far as prompt killing of organism is concerned, but—

1. It persists.
2. It penetrates.
3. It is nonirritating, particularly to the skin, unless applied continuously for long periods and in strong solution.
4. It may be used with simple rather than an elaborate technique.
5. It is painless.

(*Cir. Letter No. 318, Surgeon General's Office, October 9, 1919.*)

Monthly Report of Surgical Operations.

1. It is directed that a monthly report of operations performed in your hospital be submitted to this office.

2. This report will be a transcript or duplicate of Form 55K, clinical record, kept in the operating rooms of the various services, and the information should include the type of operation, the diagnosis or reason for the operation, the anesthetic used, and the result.

3. This report will be accompanied by a supplemental report, containing information on the following points, viz.:

(1) The total number of cases operated on.

(2) The total number of deaths in the surgical division:

A. Unoperated.

B. Operated.

C. Autopsied.

D. Detailed facts in connection with each death, including cause, primary and secondary.

NOTE.—(*a*) In case of appendicitis, give interval of time after onset of symptoms before entering hospital and interim after entering hospital before operation. (*b*) In case of hernia, the type of operation performed and treatment of sac.

(3) The number of clean wounds becoming infected:

A. Date of operation.

B. Names of operator and assistants in each infected case.

C. Discuss cause known or suspected in any case.

D. Give type of organism, if known.

4. This report should be forwarded as early as practicable after the end of the month which it covers and should be directed to the Surgeon General.

5. Instructions contained in letters from this office under dates of January 28, March 14, and March 20, 1918, are hereby revoked in so far as they conflict herewith.

(*Cir. Letter No. 352, Surgeon General's Office, November 19, 1919.*)

ORTHOPEDIC SURGERY.

Organization of Division of Military Orthopedics.

The Surgeon General made the following announcement to-day of the organization of a new Department for Military Orthopedics:

The very large percentage of the casualties of the present war which require special orthopedic method in their treatment (from 30–40 per cent) and the large percentage of these cases when so treated that can be restored to military usefulness (from 70–75 per cent) has led the Surgeon General to create an organization to care for these cases. This will be designated the Department of Military Orthopedics and will have to do with the work that is required both at home and abroad.

Maj. Elliot G. Brackett, M. R. C., has been appointed director of military orthopedics, with headquarters at the Surgeon General's Office.

Maj. David Silver, M. R. C., has been appointed assistant director of military orthopedics, with the same headquarters as the director.

For the expeditionary forces, while the work will be under the authority of the director, nevertheless so much special organization will be required that the office of director of military orthopedics for the expeditionary forces has been created and Maj. Joel E. Goldthwait, M. R. C., has been appointed to fill that position.

Associated with him and to serve as assistant directors, Maj. Robert B. Osgood, now serving with U. S. Base Hospital No. 5, and Capt. Nathaniel Allison now serving with U. S. Base Hospital No. 21, will be transferred from their present positions to this department. Major Osgood will be temporarily assigned to Col. Robert Jones, the director of military orthopedics for the British forces for the study of details of organization and methods of treatment, and Captain Allison will be temporarily assigned to similar study with the French and Italian forces.

For the assistance of the directors, an advisory orthopedic board has been created and is made up as follows: Dr. Robert W. Lovett, Boston, Mass.; Dr. Albert H. Freiberg, Cincinnati, Ohio; Dr. G. Willym Davis, Philadelphia, Pa.; Dr. F. H. Albee, New York, N. Y.; Dr. John L. Porter, Chicago, Ill.

The classifications adopted, of the conditions to be considered orthopedic, are practically the same as those in use by the British Government, and are as follows:

(*a*) Derangements and disabilities of joints, including ankylosis.

(*b*) Deformities and disabilities of the feet, such as hallux valgus, hallux rigidus, hammer-toe, metatarsalgia, painful heel, flat or claw foot.

(*c*) Malunited or ununited fractures.

(*d*) Injuries to ligaments, muscles, and tendons.

(*e*) Cases requiring tendon transplantations or other treatment for irreparable destruction of nerves.

(*f*) Nerve injuries complicated with fractures or stiffness of joints.

(*g*) Cases requiring surgical appliances, including artificial limbs.

Since prescribed and regulated work is one of the most valuable therapeutic agencies that is in use in the great orthopedic hospitals abroad, the development of the so-called curative workshop is a natural part of the general orthopedic equipment, and since the reeducation and training for industry is a natural development of this, a special advisory committee, to be called the active vocational board, has been appointed and is as follows: Dr. Royal Meeker, labor; Dr. David Edsall, medico-vocational; Mr. John E. Wilder, industrial and employment; Mr. Charles E. Stone, industrial and employment; Dr. Dean Lewis, general surgery.

(*Memo., Surgeon General's Office, August 20, 1917.*)

Orthopedic Operations.

1. It is considered desirable that a primary consideration in all orthopedic operations shall be whether or not the presenting condition was incurred in line of duty. The policy here involved is largely military, not surgical. If a man has a disease, affection, or deformity which existed

prior to his entrance into military service, and hence was not incurred in the line of duty, and is operated upon for its cure, the condition is immediately put in line of duty by the mere fact of the performance of the operation. If this patient subsequently desires to use the site of this operation as the ground for avoiding duty or obtaining a discharge, there are not only the history of the old condition and the presence of a rather prominent scar to support his contentions, but there is always the element of doubt as to whether or not he was really benefited by the operation. The result is often a surgeon's certificate of disability for a condition received in the line of duty, this latter having been rendered necessary by the performance of the operation. The operation may have been of actual benefit to the individual, but it has undoubtedly worked an injustice to the Government.

2. It is therefore directed that in the future orthopedic surgeons assigned to duty in camp base hospitals shall not operate for hallux valgus, internal derangements of the knee joint, ununited or malunited fractures, spurs on the oscalcis, or conditions of the same type that were preexistent to military service.

3. Ordinarily these patients will be transferred to one of the special orthopedic centers for observation and treatment, transfer, or discharge.

4. Hammer and supernumerary toes will not be considered as included in the inoperable class, nor will any operable orthopedic conditions that are incurred in line of duty.

5. It will be borne in mind that gonorrheal deposits and exostoses are not at any time a result of conditions incurred in line of duty.

(*Cir. Letter, Surgeon General's Office, March 11, 1918.*)

Solicitation of the Amputated for the Purchase of Artificial Limbs.

1. In the past it has been the custom of artificial-limb manufacturers to present the merits of their respective products to each amputed individual. If this plan is pursued during the present war, the expense to the manufacturers is likely to be a very considerable one, while the work of handling the hospital mail will be materially increased.

2. For the convenience of all concerned, it is suggested, therefore, that the manufacturers send their catalogues and other literature to the Artificial Limb Department, Walter Reed Hospital, Takoma Park, Washington, D. C. Two copies may be sent if desired.

3. It is proposed to place all this literature in a ward library which will be accessable at all times to both physicians and patients.

4. Your kind cooperation in this matter is requested.

(*Letter to the artificial-limb manufacturers of the United States, Surgeon General's Office, May 27, 1918.*)

Elimination of Men Having Orthopedic Defects.

1. The following is quoted from a recent cablegram from General Pershing:

> A great many soldiers of the Regular and National Guard divisions have orthopedic trouble, such as flat feet, weak backs, and lack of muscular development. Request that in training divisions in the United States these men be segregated and none sent here until they have received special training to restore them to normal. About 600 men from the 26th Division are now receiving reconstruction work in a special training camp.

2. It is evident that sufficient care has not been taken in the detection and elimination of men having orthopedic defects sufficient in extent to prevent performance of full duty before their transfer to service overseas. It is desired that this matter be given more careful attention and that the necessary measures be instituted by you to prevent similar conditions being reported among troops transferred from your camp or station.

3. The physical examination of inducted men should be thoroughly made and it should be possible to eliminate at this time the great majority of orthopedic defects, such as flat feet, weak backs, and lack of muscular development of sufficient degree to prevent the performance of full military duty. Orthopedic specialists are now represented on all boards for the examination of inducted men and the applicants passed for general military service who will subsequently develop orthopedic trouble should be comparatively few.

4. Men who have been accepted and assigned to organizations and later develop orthopedic defects which disqualify them for full military duty should be promptly transferred to developmental battalions for special training. If these cases are transferred from organizations to developmental battalions as disqualifying orthopedic defects become apparent, there should remain few, if any, cases in organizations when the order comes for transfer from one camp to another or from a camp to a port of embarkation.

(*Cir. Memo., Surgeon General's Office, June 25, 1918.*)

End Results of Corrective Operations on Hallux Valgus or Bunion, Hammer-toe, and Internal Derangement of the Knee-Joint.

1. In order to determine the advisability of corrective operations in military service, you will forward promptly to the Surgeon General, attention Colonel Brackett, the data of each case of the above conditions operated upon in your hospital prior to June 1, 1918, according to the following plan, filling out each item accurately:

Name of hospital
Name of case
Station
Diagnosis
In line of duty Days in hospital
Operation
Operator General surgeon
Orthopedic surgeon
Immediate result
End result Full duty
D. S.
S. C. D.

2. It is directed that each case be traced sufficiently to determine the military value of the operation in that individual.

(*Cir. Letter, Surgeon General's Office, July 22, 1918.*)

Status and Distribution of Chiropodists (Podiatrists).

1. It is directed that the senior orthopedic surgeon in your camp be consulted and that information be furnished as to whether the number of chiropodists (podiatrists) now serving in this capacity in the Medical Department in your camp is sufficient for the proper conduct of the service.

2. If the number now serving is not sufficient, additional ones may be secured in two ways: (*a*) By transfer in each camp; or (*b*) if none are available, through request to the Surgeon General.

(*a*) The transfer of chiropodists to the Medical Department was directed in Requisition 87, January 8, 1918, as follows:

> You are directed to transfer all chiropodists in your division to the Medical Department anp assign them to duty with your division surgeon. You are authorized to except men now fulfilling other duties which are clearly of more value to the Army than as chiropodists.
>
> (Signed) McCAIN.

(*b*) It is proposed to send unassigned chiropodists (podiatrists) to the Medical Officers' Training Camp, Camp Greenleaf, for supervision and training under the orthopedic service. From this point distribution will be made to such camps or other places as are in need of this service.

3. Reports on file in this office indicate that the minor foot ailments tend to disappear under the use of the Army shoe and that, accordingly, there will not be any great need for the attachment of such men to overseas organizations.

(*Cir. Letter, Surgeon General's Office, July 22, 1918.*)

Request for Information in re Cases of Fracture.

1. Acknowledging receipt of a letter on the above subject from Maj. John Ridlon, with an indorsement, requesting decision, by Col. E. L. Munson.

2. In this letter the claim is made by Maj. John Ridlon, on the basis of the classification of August 20, 1917 (see Exhibit A), that fractures into and near joints are included in orthopedic work, while the counterclaim is made by Maj. Edward Martin that "it is the ruling of the Surgeon General that all fractures are to be in charge of the department of general surgery."

3. The classification of August 20, 1917, has not been modified by the Surgeon General. Conditions, however, have changed, so that an interpretation of the classification is called for.

4. The treatment of fractures requires (*a*) a thorough knowledge of the mechanical principles involved; (*b*) an accurate knowledge of the anatomy of the part; and (*c*) in the case of many fractures, surgical ability of the highest order.

(*a*) The training and experience of the qualified orthopedic surgeon peculiarly fits him for meeting the first of these requirements, and were this the sole consideration, all fractures would properly be given to the orthopedic surgeon.

In order to handle all fractures, however, surgical ability of the highest order is also necessary, since many fractures are compound or require difficult operative procedures in order to obtain and maintain proper opposition. While a large number of orthopedic surgeons possess the greatest skill in this difficult work, yet some do not, and of course a very large number of those attached to the division have had no previous training in orthopedic principles.

(*b*) On the other hand, it is equally foolish and undesirable to claim that all fractures belong to the general surgeon. The fact that a man is designated as a general surgeon can not be accepted alone as evidence of superior ability. There are many general surgeons who have shown preeminent ability in fracture work, but there are also very many who possess the highest type of ability in certain lines of general surgery and yet care nothing for fracture work and have no skill in it.

5. It is evident, therefore, that while such a general classification as that of August 20, 1917, is necessary and, to a certain degree, desirable, it can not be strictly enforced. It is also evident that, if the soldier is to receive the best possible attention, such cases must not be referred as a class to any group of surgeons. The only reasonable basis of distribution is individual fitness, and this must be determined by local conditions. Those affections classed as orthopedic should be given the orthopedic surgeon, provided he is able to handle them as well as the general surgeon; furthermore, when in any hospital the orthopedic surgeon possesses greater ability in the treatment of all fractures than is possessed by the general surgeon, he should be given all.

It is the desire of the Surgeon General that, as far as possible, each case be given to the medical officer best qualified to handle it, without regard to the particular group of surgeons to which he belongs.

(*Letter to the commandant, Camp Greenleaf, Fort Oglethorpe, Ga.* (*through Division of General Surgery and Brig. Gen. T. C. Lyster*), *Surgeon General's Office, August 15, 1918.*)

Demands for Orthopedic Surgeons.

1. An unexpectedly large demand for orthopedic surgeons for overseas duty has been made for supplying base hospitals in France and England. In order to supply this demand, it becomes necessary to cut down temporarily our home personnel to the smallest possible number consistent with efficient service. If home service and overseas service make equal demands, the service overseas must be satisfied first.

2. You are requested to send to the Office of the Surgeon General, attention Orthopedic Division, the names of all orthopedic medical officers who can possibly be spared for this overseas service.

(*Cir. Letter, Surgeon General's Office, September 11, 1918.*)

Orthopedic Supplies and Equipment.

1. This revised list inclosed embodies articles of equipment and supply which it is believed are generally useful in orthopedic service in hospitals and camps. These supplies are available on requisition submitted through regular channels.

2. The use of other and earlier lists of orthopedic equipment for the purpose of requisition is to be discontinued.

3. It is believed that the articles provided in this list will cover the special needs of the orthopedic service. While other supplies will be provided for any needs present, or fairly to be anticipated, it is thought they will not ordinarily be necessary. In case other and additional supplies are believed to be essential, with the requisition state briefly and clearly the reasons therefor.

4. In making requisition for supplies, care should be used to requisition only for present needs and needs of the near future. Special care against overstock in either perishable or other supplies should be used. In case of overstock from any cause, prompt notice in detail to this division should be given.

5. On failure to receive supplies within a reasonable time after requisition therefor has been made, attention may properly be called in writing, giving date of requisition and articles asked for.

6. The orthopedic tool chest and additional supplies have been furnished to all hospitals with an orthopedic service. Where not already furnished, they may be requisitioned (articles on pages 3, 4, and 5) under caption "Orthopedic tool chest with additional supplies."

7. Felt to be furnished has been standardized and only two kinds are provided:

(1) Felt, soft gray asbestos: For padding under casts and similar places.

(2) Felt, hard gray saddle: For footwork.

8. Apparatus for the therapeutic alteration of shoes is provided as a medical supply for remedial work.

JULY 15, 1918.

INSTRUMENTS AND EQUIPMENT REQUIRED FOR USE IN HOSPITALS HAVING SEPARATE ORTHOPEDIC SERVICE.

The articles on this list will be furnished on requisition therefor:

Brace wrenches	No.	2
Frame, portable, for applying plaster of Paris jackets, Wm. Kraus, 18 Cambria Street, Boston, Mass., or equivalent	No.	1
Heaters, Burdick, type L, No. 2, Burdick Cabinet Co., Milton, Wis.; price, $12.50 net, or equivalent	No.	2
Instruments, bone special, Magnuson (V. Mueller & Co., N–2572), consisting of:		
Ten drills.		
Two each, two sizes taps.		
Twelve each, two sizes ivory screws (green ivory).		
Twelve each, two sizes ivory pegs (green ivory).		
One 1–A handle.		
One 1–B wrench.		
One No. 1 arbor, with two saws for Albee engine.		
One No. 3 chisel.		
One No. 6 handle.		
One No. 8 screw driver.		
One No. 10 saw for use with Albee engine.		
One No. 10–A wrench.		
One canvas roll.		
(Furnished to general hospitals only.)		
Knives, plaster	No.	6
Sacral rest, Meyerling's (not furnished when Hawley table is furnished), Sharp & Smith, No. 01043; retail price, $7.50	No.	1
Table, Hawley	No.	1

NOTE.—Such surgical instruments and appliances as are necessary for orthopedic uses, if not available in the general surgical equipment provided at the base hospital, may be requisitioned from the List of staple medical and surgical supplies, part 1.

SPLINTS.

Abduction splint, arm, universal, Jones, No. 709	No.	20
Abduction splint, arm, straight, Jones, No. 710	No.	20
Bed rest for knee splint, Thomas, No. 705	No.	25
Elbow splint, Jones, No. 712	No.	30
Extension splint, humerus, universal, Jones, No. 711	No.	40
Frame, Bradford, No. 701	No.	10
Frame, abduction, Bradford, No. 702	No.	1
Frame, overhead bed, Balkan, No. 719	No.	12
Foot and ankle splint, combined, Jones, No. 707	No.	50
Foot splint, rectangular, universal, Jones, No. 708	No.	50
Hand splint, skeleton, dorsiflex, Jones, No. 714	No.	10
Hand splint, long, Jones, No. 715	No.	10
Hand splint, long, with thumb piece, Jones, No. 716	No.	10
Hand splint, short, cock-up, Jones, No. 713	No.	50
Knee splint, Thomas; two sizes rings, 25 and 28 inches inside diameter; bar length, 52 inches, No. 703	No.	100
Straight splint, simple, Jones; set of four sizes—20, 16, 12, and 8 inches, No. 700	No.	100
Suspension splint, universal, Hodgen's, with 17-foot rope and galvanized pulley, No. 717	No.	50
Toe-drop brace for knee splint, Thomas, No. 704	No.	25
Wood for splints, 4 inches wide by $\frac{3}{16}$ inch thick; 6-foot lengths	No.	50
Stretcher bar, for suspension of lower extremities in transport, No. 718		

TOOL CHEST, ORTHOPEDIC.

The following supplies are furnished when requisition is made for "Tool chest, orthopedic" (in reinforced wooden chest with drawers, handles, and lock):

Brushes, paint, 1½-inch, flat	No.	3
Chisels, cold, ½-inch	No.	2
Chisels, cold, 1-inch	No.	2
Clamp, splicing, lineman's, holes—$\frac{19}{64}$, $\frac{15}{64}$, $\frac{17}{64}$, $\frac{11}{64}$, $\frac{9}{64}$, 10½ inches long, weight 16 ounces, Irvington Manufacturing Co., catalogue No. 2, A. B., or equivalent	No.	1
Clamps, malleable-iron, 4-inch	No.	2
Countersinks, $\frac{5}{8}$-inch, to use in breast drill	No.	2
Drill, breast, Miller's Falls, three-jawed chuck, No. 12, or equivalent	No.	1
Drills, Morse, for same, $\frac{3}{6}$ and $\frac{1}{4}$ inch, dozen each	No.	2

Files, flat, bastard, 10-inch, with handles	No.	3
Files, flat, second-cut, 10-inch, with handles	No.	2
Files, round, bastard, 10-inch, with handles	No.	2
Files, round, bastard, 6-inch, with handles	No.	2
Files, flat, second-cut, 6-inch, with handles	No.	3
Files, saw (three-cornered), 6-inch, with handles medium cut	No.	3
Glue, LePage's	Qt.	1
Hammer, machinist's, 1-pound, cross peen	No.	1
Hammer, machinist's, 5-ounce, ball peen	No.	1
Lead, block, 2 by 3 by 4 inches	No.	1
Pliers, side-cutting, flat nose, 8-inch	No.	1
Pliers, button pattern, 10-inch, Utica, or equivalent	No.	1
Pliers, heavy, for cutting wire, 12-inch; Nettleton nippers, or equivalent	No.	1
Punch, belt, universal, 6 size	No.	1
Punches, center, 4-inch	No.	3
Punches, rivet; one rivet set for use with $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$ rivets, one each, Osborn, or equivalent	No.	3
Rasp, wood, 10-inch, half-round	No.	1
Reamer, 6-inch, one-quarter at large end for breast drill	No.	2
Roller, bandage, double-clamp, standard	No.	1
Rule, boxwood, 24-inch, folding	No.	1
Rule, caliper, 6-inch, 1-fold	No.	1
Saw, fine-miter, 12-inch backsaw	No.	1
Saw, hack, extension, with 12 blades, 18 teeth to inch; Miller's Falls, or equivalent	No.	1
Shears, tin snips, Lyon pattern, 14-inch, P. S. and W.	No.	1
Solder, in pounds, half and half	Lb.	2
Soldering iron, 3-pound, with handle	No.	1
Soldering salts, in pounds	Lb.	$\frac{1}{2}$
Stone, oil, hard, Arkansas, 5 by 2, in box	No.	1
Stone, fine carborundum, 5 by 2, in box	No.	1
Tongs, blacksmith's, size Q. M. standard, No. 10 Atna, 22-inch, or equivalent	No.	1
Vise, bench, $3\frac{1}{2}$-inch jaw, swivel base, Reed, No. $203\frac{1}{2}$, or equivalent	No.	1
Vise, hand, $1\frac{1}{2}$-inch jaw	No.	1
Wrench, monkey, 10-inch, Trime, or equivalent	No.	1
Wrench pipe, 12-inch, Trime, or equivalent	No.	1
Yankee, plain screw driver, No. 90, size 4-inch	No.	1
Yankee, plain screw driver, No. 90, size 10-inch	No.	1

ADDITIONAL ARTICLES FOR USE WITH TOOL CHEST.

Additional articles are furnished together with orthopedic tool chest on requisition for "Orthopedic tool chest with additional supplies":

Anvil, 75-pound, Q. M. standard	No.	1
Forge, small, portable, with hood, Q. M. standard	No.	1
Iron, strap, black, soft, $\frac{1}{2}$-inch wide, $\frac{1}{4}$-inch thick, 10-foot lengths, pieces		10
Iron, sheet, black, open-hearth, 20-gauge, in half sheets, 48 by 24 inches, $\frac{1}{2}$ sheets		8
Leather, first-grade strap, about 4 ounces by side	Side..	$\frac{1}{2}$
Leather, first-grade strap, about 8 ounces by side	Side..	$\frac{1}{2}$
Rod, round, soft iron, $\frac{8}{32}$ diameter, straight, about 12-foot lengths, by pound	Lb..	40
Rod, round, soft iron, $\frac{10}{32}$ diameter, straight, about 12-foot lengths, by pound	Lb..	20

(*Cir. Letter, Surgeon General's Office, November 6, 1918.*)

Preventable Deformities.

1. By a system most carefully worked out overseas by the chief surgeon, General Finney, and Lieutenant Colonel Goldthwait, a radial control of bone and joint casualties has been in operation. This control was planned in order to avoid the considerable number of preventable deformities which were being received early in the war in the base and home hospitals of our allies.

2. A survey of nearly all the bone and joint casualties which have returned thus far to the hospitals in the United States makes it evident that the system overseas is operating with great efficiency and that very few preventable deformities are returning to this country. The splinting has been adequate, joint motion has been conserved to the greatest possible degree, and when ankylosis has been threatened, the positions in which the limbs have been immobilized have safeguarded functional use.

3. This survey of the cases has also made it evident that there is a very definite danger of preventable deformity occurring in our home hospitals where the careful observation of the cases ought to be more thorough than the congestion overseas would seem to make possible. If this is allowed to occur, we shall not be playing our part in lessening the burden of the cripple.

4. Muscular contractures, joint ankyloses in faulty positions, often represent crippling conditions which are more difficult to relieve than the acute surgical condition. Most of these are preventable if attention is constantly focused on the conservation of function.

5. We urge most strongly that special attention in these overseas cases be directed toward this conservation of function, (1) by means of retentive splints in wounds of muscles in which contractures may take place very rapidly; (2) by determining in advance the best possible position for ankylosing joints with relation to the future occupation of the individual; (3) by means of massage, mechanotherapy and hydrotherapy, curative work, and active exercise on the part of the man himself.

6. Unless such careful trained review of the overseas bone and joint cases is constantly made, our record will not compare favorably with that which has been already established by our confrères overseas working under conditions of much greater difficulty.

(*Cir. Letter, Surgeon General's Office, December 3, 1918.*)

Tentative Plan for Conduct of Orthopedic Service.

1. The Division of Orthopedic Surgery is desirous of havng orthopedic services in various base and general hospitals standardized in relation to duties of their personnel, etc., in so far as is consistent with the plans of the commanding officers.

2. In order to provide the requisite personnel for the orthopedic services, the following memorandum has been approved:

> In order to efficiently operate the orthopedic services in general hospitals receiving the returned soldiers, it is requested that a maximum personnel be allowed in accordance with the estimate submitted in the memorandum of July 29, 1918, and approved by the Hospital Division. This personnel is based on an estimate of a chief of service, with two assistants, and one medical officer for each 50 patients. Thus a service of 250 patients would have eight medical officers, and of 500 patients, 13, etc. This does not include medical officers who are specially detailed to work in the artificial-limb shop and whose duties are to supervise the fitting of artificial limbs.

(*Cir. Letter, Surgeon General's Office, December 4, 1918.*)

Special Appliances for Treatment of Orthopedic Patients.

1. The Section of Military Orthopedic Surgery is desirous of collecting data as to all the special appliances which have been used by members of the division in the treatment of deformities and stiffened joints, to retain position, to correct position, or to favor increase of motion.

2. To this end you are requested to fill out the inclosed blank and send to the Surgeon General's Office, attention Orthopedic Surgery.

(*Cir. Letter, Surgeon General's Office, December 21, 1918.*)

Consultation in Cases Presenting Special Orthopedic Features.

1. In the treatment of injuries of the extremities, the avoidance of preventable deformities, the securing of position of election in threatening ankylosis, the preservation and early return of functions, etc., is an essential feature. This treatment involves the application of the principles of joint surgery, the mechanical principles of splinting, the continued direction of the forms of therapy necessary in the prevention and correction of deformities, restoration of function, etc. To emphasize on the standardization of these features—

2. The Chief of the Section of Orthopedic Surgery will arrange that representatives of the section in the Surgeon General's Office see all cases presenting these conditions, and will advise in the treatment of such. These representatives will report to the chief of the surgical service, and the recommendations made by them as to treatment or transfer will ordinarily, if the military situation permits, receive favorable consideration.

(*Cir. Letter No. 9, Surgeon General's Office, January 4, 1919.*)

Circular of Information for Amputation Cases.

1. A supply of two-page circulars (copy of which is inclosed) is being sent to you under separate cover. The subject of the circular is "How to secure permanent artificial limbs."

2. You are requested to arrange to have a copy placed in the hands of every amputation case now in the hospital or which may come at some later date. The circular contains information as to the method of procedure in order to secure a permanent artificial limb after being discharged from the service, and which every amputation case should have while in the hospital.

3. This circular applies to all cases in which the injury resulting in amputation occurred on or after October 6, 1917. Cases in which the injury occurred before that date are supplied with permanent artificial limbs by the Medical Department (par. 1490, Army Regulations).

4. If you need a further supply of these circulars, they will be sent to you upon request addressed to the Surgeon General, attention Orthopedic Section.

The director of the War Risk Insurance Bureau authorizes publication of the following:

How to Secure a Permanent Artificial Limb.

1. After you have been discharged from the service, having already been fitted with a temporary artificial limb, and are ready to procure a permanent one:

(*a*) Apply to the War Risk Insurance Bureau, addressing a letter as follows:

Chief Medical Advisor,
Bureau of War Risk Insurance,
Washington, D. C.

In your letter state the following facts:
Full name and address.
Former organization.
Length of time temporary artificial limb has been worn.
You will receive a prompt reply.

(*b*) If you live in a town or city where there is a marine hospital, or where an office of the United States Public Health Service is located, you may apply in person. Information will be given to you by the officers of the United States Public Health Service by going to such hospitals or offices. (See list below.)

2. After making application as above, an order for a permanent artificial limb will be given or sent to you by the War Risk Insurance Bureau, after it has been settled from the records that you are entitled to it.

3. When you receive the order for a limb, you will be furnished with transportation to the manufacturer designated to fit the artificial limb.

4. Return transportation will be in care of the manufacturer designated.

5. A second transportation will be furnished you when you are directed to report for final fitting and instruction in the use of the limb. At the same time you will be directed to report to an officer of the United States Public Health Service or to some orthopedic surgeon designated by the War Risk Insurance Bureau for the purpose of having the limb inspected. On this trip return transportation will be in care of the medical officer who makes this inspection.

6. Reasonable expenses incident to this travel will be paid by the bureau on presentation of an itemized statement of such expenses.

M. W. Ireland,
Surgeon General, U. S. Army.

Following is a list of United States marine hospitals:

Alabama—Mobile; St. Anthony and Bayou Streets. Surg. J. T. Burkhalter, in charge.
California—San Francisco; Lake Street and Fourteenth Avenue. Senior Surg. L. L. Williams, in charge.
Florida—Key West; Front and Emma Streets. Surg. G. M. Guiteras, in charge.
Georgia—Savannah; York and Abercorn Streets. Passed Asst. Surg. R. H. Herrick, in charge.
Illinois—Chicago; 4141 Clarendon Avenue. Senior Surg. J. O. Cobb, in charge.
Indiana—Evansville; head of Illinois Street. Asst. Surg. R. R. Ivey, in charge.
Kentucky—Louisville; Portland Avenue and Twenty-second Street. Senior Surg. H. W. Austin, in charge.
Louisiana—New Orleans; Tchoupitoulas and Henry Clay Streets.
Maine—Portland; Foreside Road, East Deering. Senior Surg. P. C. Kalloch, in charge.
Maryland—Baltimore; Remington and Wyman Avenues. Senior Surg. H. R. Carter, in charge.
Massachusetts—Boston; High Street, Chelsea, Mass. Surg. H. S. Mathewson, in charge.
Massachusetts—Vineyard Haven. Acting Asst. Surg. E. P. Worth, in charge.
Michigan—Detroit; Jefferson and Mount Elliott Avenues. Surg. J. H. Oakley, in charge.
Missouri—St. Louis; Marine Avenue and Winnebago Street. Surg. L. P. H. Bahrenburg, in charge.
New Mexico—Fort Stanton. Surg. F. H. McKeon, in charge.
New York—New York; Bay Street and Marine Avenue, Stapleton. Surg. C. H. Lavinder, in charge.
New York—Buffalo; Main and Robie Streets.
Ohio—Cleveland; Lakeside Avenue and East Ninth Street. Asst. Surg. J. S. Gardiner, in charge.
Pennsylvania—Pittsburgh; office, Pennsylvania Avenue and Fortieth Street. Passed Asst. Surg. A. J. Lanza, in charge.
Tennessee—Memphis; Armstrong and Coffee Streets. Senior Surg. J. H. White, in charge.
Washington—Port Townsend; Franklin and Quincy Streets. Passed Asst. Surg. E. Krulish, in charge.

Also the following marine hospital stations:

Ancon—Canal Zone. Surg. S. B. Grubbs, in charge.
District of Columbia—Washington; 3 B Street SE. Asst. Surg. Gen. W. G. Stimpson, in charge.
Hawaii—Honolulu; office, customhouse. Surg. F. E. Trotter, in charge.
North Carolina—Wilmington; Eighth and Ann Streets. Prof. C. W. Stiles, in charge.
Oregon—Portland; 312 and 313 Medical Building. Acting Asst. Surg. C. H. Wheeler, in charge.
Pennsylvania—Philadelphia; 410 Chestnut Street. Surg. G. L. Collins, in charge.
Porto Rico—San Juan. Surg. W. W. King, in charge.
Rhode Island—Providence; 403 Federal Building. Acting Asst. Surg. H. A. Lange, in charge.
South Carolina—Charleston; customhouse. Senior Surg. W. J. Pettus, in charge.
St. Thomas—Virgin Islands. Passed Asst. Surg. Liston Paine.
Texas—Galveston; 710–714 American National Insurance Building. Surg. B. L. Wilson, in charge.
Washington—Seattle; 416 Central Building. Surg. B. J. Lloyd, in charge.
Wisconsin—Milwaukee; 516 Government Building. Acting Asst. Surg. H. A. Reinhard, in charge.

(*Cir. Letter No. 90, Surgeon General's Office, February 14, 1919.*)

OTOLARYNGOLOGY.

General Instructions for Medical Officers of the Section of Surgery of the Head.

The Surgeon General has decided to correlate as much as possible the surgical procedure which deals with the head. Their work is to be carried out side by side and dovetailed whenever necessary. Ophthalmology and otolaryngology have long been recognized as closely associated. Brain surgery and plastic surgery of the face are just separating from general surgery. All four, however, can properly rank as special surgery. They have been grouped, therefore, into a unit called the Section of Surgery of the Head. It is proposed to attach such a section to each base hospital of the National Guard and of the National Army. The ideal aimed at is to assign to each 500-bed hospital an ophthalmologist, an otolaryngologist, a brain surgeon, and a plastic surgeon who works in conjunction with a dental oral surgeon. In a 1,000-bed hospital the personnel is doubled by giving each division chief an assistant. Owing to the large amount of work involved in the examination of the recruits of the National Army, the above personnel is not adhered to in the first assignments—for instance, in a number of cases three otolaryngologists have been selected. This proportion is temporary.

The formation of the above-mentioned group into a Section of Surgery of the Head is for the purpose of utilizing fully for the benefit of the soldier the latest attainments of special surgery, and it is hoped that the attempt will meet with the sympathy of all concerned.

A special building has been recommended for the use of the Section of Surgery of the Head. It consists of a common reception room with three wings, one for otolaryngology, one for ophthalmology, and one for the dental oral surgeons. By reference to the accompanying plan, it will be seen that each specialty has provision made for a special operating room. The brain surgeon has the choice of using the eye operating room or the general surgical operating room. The plastic surgeon has the option of using the operating room for general surgery or of using the operating room set apart for otolaryngology.

A short description of the manner in which it is planned to use the various rooms indicated on the plan for the examination of the draft is as follows: All the recruits who are designated by the regimental surgeons for a special examination in otolaryngology, ophthalmology, or who need a dental examination are assembled in convenient numbers in the general reception room. Those in charge of the reception room enter each candidate's name on a tally sheet under the division in which he is to be examined, a duplicate of which is given to the examiner. The recruit who is to have an ophthalmological examination is given a red tag. This the recruit fastens to a buttonhole of his coat. The recruit who is to receive an otolaryngological examination receives a white card, and the recruit who is to have a dental examination a blue card. Recruits who are to have more than one examination are given the necessary cards. The card is worn until the appropriate examination is carried out. The sergeant in charge of the reception room carries each recruit in turn to the appropriate room and there delivers him to the officer designated in the special department to receive him. When the examination is completed, the recruit returns to the reception room, turns his card over to those in charge, and his name is checked off the tally sheet.

The progress of the recruit through the rooms for otolaryngology.—The recruit who is to have an otolaryngological examination is taken first into room E No. 1. An examination here determines the presence or absence of ceruman. If ceruman is found, the recruit is sent into the adjoining room, E No. 3, where there are facilities for syringing the ears. The ears cleaned, the recruit is now sent to the hearing-test room, E No. 7, and the hearing tested by the sergeant, who has been trained for the purpose and assigned to this duty, or by the physician himself. The result of hearing test is noted on the recruit's history blank and he is now shown into the general room E No. 8 for the further examination of the ears. The examining tables for the ear are placed on the left. On the right are two booths for the examination of the nose and throat. To these booths the recruit comes after the ears are examined. If transillumination of the accessory sinuses is necessary there is a dark room adjoining one of the booths.

When there is a question of malingering, the recruit is carried to the examining room opposite the hearing-test room. In this room he is tested by the Wagner malinger phone. This instrument comes with the equipment furnished to each cantonment hospital. The pamphlet issued by the War Department and called "Instructions for the physical examination of drafted men at National Army Cantonments," page 9, gives the revised standard of hearing tests and the method of making the test for detecting malingering.

It is not necessary to say anything about the operating room and its accessory rooms. The use of these rooms is sufficiently indicated by the designations found on the plan.

OTOLARYNGOLOGY.

Equipment for the rooms in the examination, treatment, and operating building:

Room No. 1E.—Metal table; two metal stools; one set aural specula.

Room No. 2E—Record room.—Wooden table; two chairs; files for records. (Obtain these supplies from quartermaster.)

Room No. 3E—Wash room.—Metal stool; metal ear syringe; pus basin.

Room No. 4E—Staff room.—One wooden table; two wooden chairs. (Obtain from quartermaster.)

Room No. 5E—Bárány and malingering room.—Bárány chair; Wagner malinger phone; wooden table and chair. (Obtain from quartermaster.)

Room No. 6E—Spare room.—Use not designated.

Room No. 7E—Hearing-test room.—Mark, by painting a circle on the floor, the spot where the recruit is to stand. On one wall indicate stated distances from this circle; for instance, 5, 10, 15, 20 feet.

Room No. 8E—General examination room.—At the far window on the right place a metal table and two metal stools. On the table place the necessary instruments for examining and treating ear conditions. On the same side at the next wall plug place a metal table with electric sterilizer.

Opposite the ear table in the first nose and throat booth on the left place a metal chair and two metal stools, a Coakley condenser, Sorenson spray apparatus, set of spray bottles, Coffin suction and spray apparatus, three enamel spit cups for cuspidors.

In the second nose and throat booth place metal chair, two metal stools, three spit cups, the necessary enamel bowls, cotton, and solution.

In both booths place the required instruments for examining and treating nose and throat conditions. Place an electric instrument sterilizer convenient to these two booths.

Place instrument cabinet in a convenient location.

Obtain the necessary sterile goods from the sterilizing room and furnish all the examining tables. Obtain from the pharmacy the necessary solutions and furnish tables. Distribute a supply of enamel bowls.

Room No. 9E.—Set up transillumination apparatus.

Room No. 10E.—Wooden table and chair. Have carpenter put up shelving as sterilizing room nurse specifies.

Room No. 11E.—Procure and place fixtures for towels, soap, and water-closet paper.

Room No. 12E.—Install electric sterilizer; one metal table. Procure and place whatever wooden equipment proves necessary.

Room No. 13E.—Have operating-room nurse order from pharmacy and place necessary equipment.

Room No. 14E.—Operating table; two enamel tables; table for anesthetist; enamel stool; foot stool; combination washstand and irrigator; immersion bowl stand; instrument cabinet; fasten rheostat to wall; headlight. Have operating-room nurse choose necessary supply of bowls from those furnished. Procure stock solutions from the pharmacy.

Progress in special ophthalmic examination.—The men to be examined having been assembled in the reception room and each man given his red card, the list is given the examiner and the first man is called into the examining room, 1-O, accompanying plan. The method of examining is described in the "Instructions for the physical examination of drafted men at National Army cantonments," 1917, S. G. O. Memorandum No. 4, pages 6, 7, and 8. The man, on his return to the reception room after the completion of the examination, turns his card over to those in charge and his name is checked off the list.

The test charts should be placed in room 1–O, where they can be illuminated by the electric fixtures indicated in the plan. The malingering-test equipment should be placed in examination room 2–O; ophthalmoscopic and retinoscopic examinations made in the dark room, 3–O.

The route of the recruits through the various rooms is given in detail more for the purpose of explaining the scheme for their use which the originators of the plan had in mind than for a rigid guide. Only actual trial will determine the best method of procedure.

It is hoped that a sufficient equipment of instruments has been supplied for an examination of recruits, including an examination for malingering and for the ordinary run of operations. The lavish supply of instruments found in most of our private hospitals can not be duplicated in an Army hospital. Any vital instrument or a workable substitute can be secured by a proper requisition.

As a rule, steam can not be had for any except the central sterilizing room. All supplies, therefore, must be brought from here. For the sterilization of instruments in the various operating rooms electricity must be relied upon.

(*General Instructions, Surgeon General's Office, November 27, 1917.*)

Report as to Complete or Near Deaf and Speech Defects in Your Hospital.

1. It has been rumored that a certain number of cases of complete or near deaf and speech defects are being held in United States Army general hospitals.

2. There may be a number of cases of complete or near deaf and speech defects in your hospital in which the major condition is the one calling for chief attention.

3. It is desired that you notify this office, attention Physical Reconstruction Division, if you have any cases of complete or near deaf or speech defects, as mentioned in paragraphs 1 and 2, that may be in your hospital requiring treatment for these conditions.

(*Letter to the commanding officer, ——————, Surgeon General's Office, November 19, 1918.*)

Information for Historical Purposes.

1. It is requested that you furnish this office with the following information:

(*a*) A short history from the standpoint of otolaryngology of the epidemic of influenza.

(*b*) A short history of the section of otolaryngology at your base hospital.

(*c*) A photograph of the head building, of the otolaryngological clinic room, and named pictures of the otolaryngological staff, past and present, as far as they can be easily obtained.

2. This information is desired for historical purposes. Communications on this subject should be addressed to the Surgical Division.

(*Letter to the chief of the section of otolaryngology, United States Army general hospitals (through the commanding officer), Surgeon General's Office, December 20, 1918.*)

OPHTHALMOLOGY.

Furnishing Soldiers with Spectacles.

1. You are directed to make suitable arrangements through the base hospital post exchange, or a suitable cantonment post exchange, for the handling of spectacles to be prescribed by the surgeons in the Subsection of Ophthalmology, Section of Surgery of the Head.

2. Arrangements have been made whereby F. A. Hardy & Co., will furnish spectacle frames to the various cantonment base hospitals at a price of $2.75 per dozen net. Price of single orders to be 40 cents per pair, with a discount of 6 per cent if paid by the 10th of the month following date of purchase. The lenses to be furnished at prices given in regular prescriptions list to be furnished, less 6 per cent if paid by the 10th of the month following date of purchase.

3. Spectacles are to be sold to officers and recruits at a price of 10 per cent above cost price.

4. One style of spectacles frame is to be used in every case, catalogue No. 5468, the American Optical Co. Samples of these frames, together with prescription blanks, books, envelopes, tags, labels, etc., will be supplied by F. A. Hardy & Co.

5. To provide for the proper adjustment of the spectacle frames, an optician may be selected from among the drafted men, who, if advisable, may be made sergeant. He should be assigned to duty in the Subsection of Ophthalmology, Section of Surgery of the Head. His duty will be to receive the prescription for the glasses from the surgeon in charge, deliver them to the post exchange get the glasses back, and properly adjust them. If no optician is available, one of the junior surgeons in the Subsection of Ophthalmology could be made responsible for the adjustments.

6. The orders from the base hospital under your command at Camp Dodge will be placed through F. A. Hardy & Co., 10 South Wabash Avenue, Chicago.

(*Cir. Letter, Surgeon General's Office, November 27, 1917.*)

Activities of Eye Service Since its Establishment.

1. You will have prepared a report of the eye service since its establishment, the exact date being given, which shall include the complete personnel, with dates of assignment and release; the number of patients treated; a numerical and classified list of the diseases encountered and treated; the number of patients admitted to the eye ward; the number of operations performed, properly classified; the number of glasses furnished by the Government, and the number obtained through the post exchange or other source prior to the Government taking over the furnishing of glasses.

2. Other data of interest must be added to this report; the attached letter is furnished as a guide.

3. If possible, send a photograph of the rooms and their equipment used in ophthalmic work.

4. You are directed to forward this report to the Surgeon General, attention of Lieutenant Colonel de Schweinitz, as promptly as possible.

1. Summarize the work, since the establishment of the eye service, in the medical ophthalmoscopy, that is, examinations made in other services in the base hospital, for example, ophthalmoscopic examinations in cases of meningitis.
2. State cases of ocular disease attributable to infections of the accessory sinuses, especially the ethmoid.
3. State what disposition was made of the trachoma cases and how many were treated.
4. State the experience in the ocular manifestations of syphilis and gonorrhea.
5. Record the experience in ocular complications during the influenza epidemic.
6. State whether during the prevalence of the streptococcus hemolyticus there were any ocular complications attributable to this organism.
7. State whether the equipment of the ophthalmic service was satisfactory and whether the work performed by the officers in charge was satisfactory.
8. State whether any special courses of instruction in ophthalmic work were given during the period of the existence of the service.

(*Cir. Letter No. 6, Surgeon General's Office, January 2, 1919.*)

DENTAL SERVICE.

Instructions Concerning Dental Service.

DENTAL UNITS.

1. Dental surgeons will be organized to work in units, for each of which a dental infirmary will be constructed. Until such time as dental unit buildings shall be completed, working space for the dental personnel should be provided in the base hospital and regimental infirmaries or other suitable available buildings. In selecting such space, due and equitable consideration should be had for the needs of the dental service.

2. While not permanently assigned to any definite organization, a dental unit will ordinarily serve a brigade, with such additional organizations as may be conveniently assigned.

3. Each dental unit will operate under an assistant dental surgeon, selected by the dental surgeon for his suitability for such detail. All dental officers are under the immediate control of the dental surgeon, who, in turn, is under the immediate supervision of the division surgeon. The dental personnel of the surgical head units will be assigned by the Surgeon General.

4. Ordinarily one assistant dental surgeon and 10 operating dental surgeons will be assigned to each dental unit. This number may be modified as circumstances render advisable, subject to the approval of the Surgeon General.

Dental Property and Reports.

1. Dental reports will be submitted as follows:

(*a*) To the dental surgeon (direct)—

(1) Consolidated report by each dental unit.

(2) Consolidated report by dental officers attached to the surgical head unit.

(3) Individual report by dental surgeons not included above, should there be such.

(*b*) The dental surgeon will consolidate such individual reports (class 3) as he may receive, and forward all reports to the Surgeon General through the division surgeon.

2. The dental property in use by the dental personnel in the camp should be carried on the return of the camp medical supply officer, who will issue it on memorandum receipts to such officers as the dental surgeon may designate. All requests for dental supplies and equipment must be approved by the dental surgeon, who will be responsible for the submission of the necessary requests for the proper equipment of the dental service at the camp and for the proper care, use, and preservation of all dental equipment in use.

Types of Dental Work Authorized.

IN THE UNITED STATES.

1. Dental officers will do the usual work now authorized by regulations.

2. The base hospital dental laboratories, dental units, general hospitals, and other important stations designated by the Surgeon General will be equipped to do the following work in addition:

3. Repair of crowns, bridges, and plates for men who have been accepted wearing these appliances.

4. Making new plates for men for whom the regimental surgeon or the dental surgeon recommends such work as necessary for health.

IN FRANCE.

1. Dental units will be sent over with personnel and equipment sufficient to do practically the same types of work as described above for the United States. These units will be assigned to such hospitals, tactical organizations, or territorial sections as the chief surgeon may decide.

2. The units attached to the head surgery hospitals will be especially organized with personnel and equipment to do the types of work required.

(*Instruction Letter No. 2, Dental Division, Surgeon General's Office, October 16, 1917.*)

Return of Dental Officers.

1. The Surgeon General directs that, in compliance with the spirit of the provisions of paragraph 41, section 6, Special Regulations 43, 1917, a report be made to this office at once, through medical channels, on "Dental officers' return card," of all dental officers on duty with the command and of dental officers reporting for duty thereafter.

2. A second report will be made when the officer reported upon has been under observation for a period of three months. Should circumstances or further observation make a change desirable in the data last submitted, report of same should be promptly made. The first report in each case will be submitted in duplicate. An initial supply of cards will be furnished from this office without requisition.

DENTAL OFFICERS' RETURN CARD.

(1-D. D.)

Name................................Rank......, D. C.—D. R. C.—Nat'l Guard.

Station.. Date....................

1. General qualifications: (Excellent—Very good—Good—Fair—Poor.)

2. (*a*) Suitable for independent detail: (Yes—No.)

(*b*) Suitable for foreign service: (Yes—No.)

*3. Years in dental practice..

*4. Born: Date........... Place....................................

*5. Married: (Yes—No.) *6. Children: (Give ages)........................

*7. (*a*) Date of commission (D. C.)......................................

(*b*) Date ordered to active duty (D. R. C.)............................

(*c*) Dates of Federal service, commissioned (Nat'l Guard)................

....

*8. Professionally examined (Nat'l Guard) (Yes—No.) Date................

Place...................; examiner..

*9. Physically examined since called to Federal service (Yes—No.)

*10. School..

[Reverse side of dental officers' return card.]

(1-D. D.)

*11. Experienced in: Operative dent..........; mechanical dent..........; major oral surg..........; minor oral surg..........; conductive an.......... exodontia..........
*12. Specialty..........
*13. Demstr. or teach. in dent school.......... Dates..........
*14. Demstr. or teach. in med. school.......... Dates..........
*15. Dental societies..........
16. Present duties..........
....
17. Remarks..........
....
....
....
....

....
.........., *Corps, U. S. A.*

Note.—1. Erase words not applicable.
2. Questions preceded by star (*) need be answered on first report only.
3. If space is insufficient, attach additional card or sheet.
4. (X) indicates "Yes."

(*Instruction Letter No. 3, Dental Division, Surgeon General's Office, November 15, 1917.*)

Dental Reports.

1. It is desired that in future a consolidated monthly report of dental work be submitted for each camp and cantonment. (See Dental Letter No. 2, S. G. O., October 16, 1917, Section Dental Property and Reports, par. 1.) A similar report will be submitted by the senior dental officer whenever two or more dental officers are stationed in the same command.

2. A tabulated dental report on "Tabulated dental report card" will accompany each consolidated report of dental work.

3. In forwarding monthly report or consolidated report of dental work, the last dental officer through whom report is forwarded will note under the head of remarks (*a*) the total number of dental officers on duty with the command on the last day of the month, (*b*) the changes in the strength of the dental personnel during the month, (*c*) the number of officers and enlisted men in the command entitled to dental treatment, (*d*) others entitled to dental treatment.

4. A prompt special report will be made whenever the number entitled to dental treatment is such as not to require the full services of the dental personnel of the command.

TABULATED DENTAL REPORT CARD.

(3-D. D.)

Month.......... Year..........
Station.......... ....
....

	Total.	Average per officer per month.
Number of initial dental examinations:		
1. Number graded class (*a*)..........	....	....
2. Number graded class (*b*)..........	....	....
Mouths freed of chronic dental focal infections..........	....	....
Oral surgery cases referred to surgical head unit..........	....	....
Permanent fillings..........	....	....
Temporary fillings..........	....	....
Calculus removed..........	....	....
Root canal fillings..........	....	....
Extractions..........	....	....
Dentures..........	....	....
Crowns, bridges, and dentures repaired..........	....	....
Total dental officers..........	....	....
Total operating days..........	....	....
Note.—For instructions see reverse side.		

(Reverse side of tabulated dental report card.)
(3-D. D.)

INSTRUCTIONS.

1. "Tabulated dental report cards," in duplicate, will be forwarded with each consolidated monthly "Report of dental work," attention Sick and Wounded Section, Sanitary Division, S. G. O.
2. Findings of initial dental examination:

   Class (*a*).—A clean mouth showing no subgingival calculus or marked salivary deposits; the teeth being free from major caries, peridental pockets, and suspected or known periapical infections; absence of root remnants or impacted teeth.

   Class (*b*).—A mouth showing subgingival calculus or marked salivary deposits; dental caries extending into the pulp chamber; suspected or known periapical infections, or marked peridental pockets; presence of root remnants or impacted teeth.
3. To obtain total operating days, add together the number of operating days each officer has been on duty with the group during the period reported upon. The division dental surgeon should not be included in this computation.

(*Instruction Letter No. 4, Dental Division, Surgeon General's Office, January 14, 1918.*)

Dental Reports.

1. In forwarding report of dental work performed in each camp or cantonment, it is desired at this time that a single consolidated monthly report be submitted (Form 57, Medical Department, revised April 28, 1917). This shall be consolidated from the individual monthly reports of all the dental officers coming under the direction of the dental officer in charge, inclusive of the dental officers at the base hospital.

2. A tabulated dental report on "Tabulated dental report card" shall accompany each consolidated report of dental work. In tabulating permanent fillings include all gold malleted fillings, all gold inlays, silicate fillings in anterior teeth, and amalgam fillings in posterior teeth. Under temporary fillings, include all oxyphosphate fillings not over treatments. Under calculus removed, include all prophylactic operations.

3. In forwarding monthly consolidated report of dental work, the dental officer in charge shall note under the head of "Remarks" (*a*) the number of officers and enlisted men in the command entitled to dental treatment; (*b*) others entitled to dental treatment: (*c*) an attached monthly return of all dental officers with their rank on duty on last day of the month, and report of losses since preceding return.

4. A special report shall be made whenever the number of dental officers is deficient or in excess of the number authorized to meet the needs of the dental service.

(*Instruction Letter No. 5, Dental Division, Surgeon General's Office, May 25, 1918.*)

Instructions Concerning Dental Service.

1. A form similar to the sample attached is to accompany hereafter the consolidated monthly report (Form 57).

2. When space permits, the report referred to may be placed on the back of the monthly report under the heading "Remarks." When space does not permit, it is to be made out on a separate sheet and attached to the monthly report.

3. The monthly report should be mailed not later than the fourth day of each month and addressed to the Surgeon General, United States Army, Dental Division, Washington, D. C.

4. Actual working days should include the total days the dental officer was on duty.

5. "Efficiency" should be the estimate of the qualifications of the dental officer as viewed by the dental officer in charge, and marked as follows:

   1. Excellent.
   2. Good.
   3. Fair.
   4. Poor.

6. Half days should be counted as half days only on the individual officer's report.

7. Under the heading "Remarks" on the back of the consolidated monthly report (Form 57) should be noted:

All the dental officers of this command are familiar with Paragraphs 1398 and 1401, Army Regulations, and have complied with said regulations.

(*Instruction Letter No. 6, Surgeon General's Office, Dental Division. Undated.*)

Instructions for Dental Surgeons in Charge of the Dental Service at Camps and Cantonments.

1. The dental surgeon in charge will be officially designated as "The Dental Surgeon."

2. The senior dental surgeon on duty at a post or camp will assume charge of the dental service unless otherwise directed by this office.

3. The full quota of dental surgeons was ordered to duty by this office advisedly.

4. The dental surgeon will as early as practicable make report as to the number of dental surgeons on duty at his camp, including name and number of years in practice of each dental officer, and the number of dental outfits available for use, indicating whether base or field outfits. All dental property in the camp should be carried on the return of one dental officer, who should, if available, be a member of the Dental Corps of the Army. Individual outfits should be issued on memorandum receipt to the respective dentists on duty.

5. The dental surgeon is charged with the duty of advantageously utilizing to the full interests of the Government the time of all dental officers reporting for duty. It is considered that a system of instruction may be instituted which will utilize the time of the dental personnel to the manifest benefit of the service and the personnel. This office must consider that reports to the effect that dental surgeons are idly awaiting the completion of arrangements for the inception of their actual clinical duties reflect strongly upon the administrative ability of the dental surgeon in charge.

6. Attention is invited to second section paragraph 1396, A. R. 1913. The best results can be obtained only through harmonious cooperation between the dental and medical service.

7. Newly appointed dental surgeons will be instructed to comply with the requirements as to personal reports immediately upon arrival.

By order of the Surgeon General.

(*Instruction Letter No. 1, Dental Division, Surgeon General's Office, September 11, 1918.*)

Amendment to Dental Letter No. 6.

Paragraph 3 of Dental Letter No. 6 is hereby amended to read:

The monthly report will be forwarded through medical channels to the Surgeon General before the 5th day of the next succeeding month.

(*Cir. Letter No. 116, Surgeon General's Office, March 5, 1919.*)

Repair of Dental Disabilities.

1. In cases of dental disability due to traumatic injury incurred in the line of duty, it is the policy of the War Department to provide suitable repair therefor entirely at public expense, including gold fillings or inlays, or crown and bridge work, when the same is necessary. This policy operates in time of peace as well as in time of war, and upon officers as well as upon enlisted men.

2. In cases of dental disability otherwise incurred—

(*a*) As to officers: The Government supplies only the more plastic and inexpensive materials or plates, and does not furnish gratis gold or platinum, or provide crown and bridge work.

(*b*) As to enlisted men: In time of peace the same policy governs as for officers under paragraph 2*a*; in time of war, the policy indicated in paragraph 1 applies, provided that the Government undertakes only such degree of repair as will restore mastication during the probable period of military service, and will not supply bridges, crowns, gold fillings, and other costly work when plates and the less expensive grades of work will meet the temporary needs.

3. Timely requisitions should be made for such reasonable amount of materials as can be estimated in advance. Material required in emergency, or for the special needs of a particular case, when authorized under the foregoing instructions, may be purchased locally, the purchase vouchers (Form 330) in such event to be accompanied by the explanation called for in paragraph 476, M. M. D.

4. Dental officers will make monthly reports or statements to this office showing in each case by name the quantities of the precious metals expended by them in accomplishing the repairs hereinabove authorized. Form 18, M. M. D., may be adapted to the purpose.

(*Cir. Letter No. 126, Surgeon General's Office, March 6, 1919.*)

ROENTGENOLOGICAL SERVICE.

Coolidge Tube Technique.

1. The X-ray Division has for some time been aware that there is an unusually high mortality in Coolidge tubes at the various base hospitals and posts, and investigation of the condition of tubes returned to the New York medical supply depot for purpose of repair reveals the fact that many of these tubes have been destroyed because they have been asked to perform, either through ignorance or improper technique, to a degree far beyond their ability.

2. It is directed, therefore, that the attention of the roentgenologist be called to the instructions for operation of Coolidge tubes attached to and made a part of this communication.

3. Aside from the fact that this type of tube is the most expensive of its kind, there is the fact that while the American Expeditionary Forces and our Allies demand these tubes in large quantities, the supply is limited and not readily increased. It is therefore highly necessary that great care be employed in the operation of these tubes in this country and that each should be so employed as to obtain from it the maximum number of exposures and the maximum hours of fluoroscopic service.

4. The instructions attached are drawn from the experience of a number of the most successful roentgenologists in the country and the work which can be accomplished under the technique indicated is of a very high degree of excellence. If these instructions be carefully read until they are understood and carried out fully, it is to be expected that the operator will obtain many thousands of exposures and many hundreds of hours of service from each Coolidge tube.

5. It is realized that certain unavoidable accidents may result in the destruction of these tubes, but it is the wish of the Surgeon General that no more tubes be returned to the supply depot for repair showing evidence of destruction due to the attempts to pass enormous currents through them for the purpose of demonstrating the possibility of so-called instantaneous roentgenography, or punctured through carelessness in throwing the operating switch without lighting the filament or by permitting the positive wire to approach too near to the bulb.

INSTRUCTIONS.

Suggestions for the successful manipulation of Coolidge tubes, tending toward longevity of the tube.

A Coolidge tube is a pure electron tube; during its operation efforts are made to produce as nearly a gas-free tube as possible. In its operation an electric discharge takes place across the vacuum between the cathode and the anode, flowing from the cathode to the anode. The quantity or milliamperage of current flowing through the tube varies directly with the temperature of the spiral filament in the cathode sleeve. The penetration of the rays emitted from this tube depends entirely upon the voltage impressed upon the tube.

Limitations of performance of any Coolidge tube depend upon the ability of the tungsten target or anode to withstand the electron bombardment without undergoing a rise in temperature above the melting point of the metal of which the target is composed. If this target could be kept below the melting point, there would be no limitations to the output of such a tube. There is a tendency among some operators to ignore these limitations and to continue to force through the tube quantities of current at considerable voltage after the target has reached a high degree of incandescence.

It is not so much the temperature of the target itself that should be considered but rather the temperature of the focal spot or area under bombardment. When, due to the bombardment, this spot attains the temperature at which tungsten melts, there is produced an evolution of tungsten vapor, whereupon the Coolidge tube ceases to functionate as a Coolidge tube and begins to functionate as would any gas tube, with the exception that photographic detail in the image produced may be expected to be lost.

If the tube be compelled to continue to withstand the current effects when such a temperature has been reached, there results a spattering of molten tungsten from the target spot which may be deposited either as a fine metallic spray of globules of tungsten or as a condensation of tungsten vapor producing a mirrorlike deposit upon the interior of the tube.

Even after the tube has become blackened by such deposit, its usefulness is by no means lost, and it should not be discarded so long as it permits the discharge of electrical currents at considerable voltages. Tubes thus gradually blackened, even so much so as to render them quite opaque, frequently remain capable of many thousands of subsequent exposures.

There are furnished from the supply depots two types of Coolidge tubes—first, the standard type with 6-inch bulb; second, the so-called radiator type with smaller bulb and a copper radiating device attached to the anode stem. This smaller radiator type tube should never have impressed upon it voltages in excess of 60,000 and should never be asked or permitted to transmit currents in excess of 10 milliamperes. Voltages or milliamperages in excess of these will ultimately destroy and may very quickly destroy this type of tube. When a radiator tube has been exposed to currents in excess of 10 milliamperes the effects of such exposure is indelibly marked thereby upon the target and can be easily recognized by the supply officer at the supply depot when such tube has been turned in for repair.

The original type of Coolidge tube should never be subjected to currents in excess of 60 milliamperes at a voltage of 60,000. Such a current at this voltage is amply sufficient with proper screens for the production of gastrointestinal plates or for the production of satisfactory roentgenograms of the chest, even in heavy types of invalids. The form of technique requiring the use of currents in excess of 60 milliamperes is not looked upon with favor by the Surgeon General's Office. It is not necessary. The results so obtained are not better than those attended by a much smaller rate of tube mortality.

It is directed that the officers in charge of the roentgen equipment perfect themselves and instruct their technicians in the technique for the manipulation of Coolidge tubes, in the roentgenography of all conditions, aside from gastrointestinal and chest work, employing a milliamperage of 25 to 45 milliamperes. Where the part under examination can be rendered immobile, it is directed that more time be given the exposures and milliamperages of about 25 employed.

Attention is called to the fact that the so-called spark meters or volt meters furnished upon some types of apparatus should not be considered evidence of, or relied upon for, the determination of the voltage impressed upon the tube. The only evidence to be so considered is the length of parallel gap in air between blunt points which balances the voltages of the tube when carrying full load. Attention is directed to the methods of charting transformers and testing spark gaps described in the Army X-Ray Manual.

When operators find it impossible to obtain satisfactory plates under the above limitations it is directed that they communicate with the Surgeon General, exactly defining their difficulties and stating the type and make of machine, voltage, and current, A. C. or D. C.

(*Letter to commanding officers, all base and general hospitals, Surgeon General's Office, April 23, 1918.*)

Shortage of X-Ray Plates.

1. You are informed that the shortage existing with respect to X-ray plates, particularly of the larger sizes, has now apparently ceased. Full stocks of plates in all sizes are now available for issue and will be issued as requisitioned for.

2. It is requested that the supply officers be instructed to requisition for only such supply of plates as may be expected to meet the requirements of the X-ray laboratories for a period not in excess of two months. It is not wise to attempt to maintain considerable stocks of these plates during the hot and humid season, as their keeping qualities are such that they may be expected to deteriorate. Attempts will be made by the supply depots to give prompt service on requisitions so that it will not be necessary to requisition for large stocks in advance.

3. All apparatus for the manipulation of films should be carefully preserved and all films on hand and in stock should be expended prior to stocking up with plates. If another plate shortage should occur, films will again be issued in large part on requisitions for plates.

4. It is directed that a wise economy be observed in the expenditure of these supplies in order that another plate shortage be avoided.

(*Cir. Letter, Surgeon General's Office, August 15, 1918.*)

Radiator Type Coolidge Tubes.

1. Careful tests and repeated observations have revealed the fact that the small special air-cooled radiator type Coolidge tube may be, and probably will be, destroyed if permitted to operate for longer than two minutes at 10 milliamperes, backing up a 5-inch gap.

2. Further, it is not advisable that this tube be operated on continuous runs longer than four minutes at 5 milliamperes, backing up a 5-inch gap.

3. If a few moments' interval be permitted to occur between successive exposures, this tube will operate indefinitely, but if the limits above set forth are overstepped, then there is likely to occur such a liberation of gases from the copper parts of this tube that when cooled it will not regain that perfect vacuum which is so necessary for its successful operation.

4. The tubes returned to depot for repair showing evidence of having been run to excess, thus resulting in their destruction, will be considered as improperly expended and may be charged to the roentgenologist.

5. The supply of these tubes is limited, and the roentgenologist must exercise great care in order to obtain a long, useful life from each of them.

(*Cir. Letter, Surgeon General's Office, August 15, 1918.*)

X-Ray Service.

1. It is desired that this office be supplied with information concerning the commissioned personnel of the X-ray laboratory in your hospital as of October 1, 1918, to confirm records of the X-ray Division, this information to include rank, name X-ray school attended, per cent of time devoted to X ray, and duties other than X ray of the chief and his assistants; date concerning patients, laboratory space, service, and recommendations toward improving the service.

2. It is requested that the inclosed report blank be used in forwarding the desired information to the Surgeon General's Office, attention Lieut. Col. George C. Johnston, room H-130.

	Rank.	Name.	X-ray school attended.	Per cent time to X ray.	Duties other than X ray.
Chief					
Assistant					

Number of patients examined, September, 1918

Is laboratory space adequate

Is the service satisfactory

Recommendations toward improving the service

(*Cir. Letter, Surgeon General's Office, September 20, 1918.*)

X-Ray Apparatus, United States Army Hospital.

1. It is requested that a list of X-ray apparatus at your hospital be supplied this office on inclosed forms. The duplicate copy may be retained.

2. Under "Further remarks" any additional information concerning your apparatus should be given. Information as to the electric current conditions should be supplied in space allowed, taking care as to its accuracy.

3. Upon receipt of the information request a copy of the revised Army X-Ray Manual will be sent you.

4. Address reply to the Office of the Surgeon General, Division of Roentgenology.

LIST OF X-RAY APPARATUS AT

Date

Quantity.	Supply No.	Article.	Make.	Manufacturers Serial No.	Remarks.
	1502	X-ray machine:			
		Transformer			Auto transformer control.
		Motor			
	1507. 1	Box localization apparatus methods, A, B, C, D, E, F			Apparatus for all methods Other devices
	1507. 3	Breaker, circuit			
	1523	Localizer, eye			
	1529	Automatic plate changer, stereoscopic, 14 by 17 inches.			
	1534	Radiometer			
	1537	Roentgenoscope, vertical			
	1538	Rotary converter (separate)			Voltage, A. C.——; D. C., ——; capacity, ——.
	1541	Screens, intensifying, 14 by 17 inches, mounted in cassetts.			Condition
	1541. 1	Screens, intensifying, 10 by 12 inches, mounted in cassetts.			Condition
	1541. 2	Screens, intensifying, 8 by 10 inches, mounted in cassetts.			Condition
	1542	Screens, intensifying, 14 by 17 inches, unmounted.			Condition
	1542. 1	Screens, intensifying, 10 by 12 inches, unmounted.			Condition
	1542. 2	Screens, intensifying, 8 by 10 inches, unmounted.			Condition
	1543	Stand, tube			Stereoscopic
	1546	Stereoscope, Wheatstone			
	1547	Switch, foot			
	1549	Switch, high-tension, double-throw			
	1550	Switch, high-tension, single-throw			
	1551	Table, X-ray, base hospital type			
	1554. 1	Time switch			
	1558	Transformer, Coolidge, filament lighting			
	1559	Tubes, Coolidge			Focus Condition
	1559. 1	Tubes, Coolidge, special radiator type			Focus Condition
	1560	Tubes, gas, tungsten target			Focus Condition
	1575	Army bedside X-ray unit			
	1581	Rotary converter for bedside X-ray unit, 110-volt, direct current.			
	1581. 1	Rotary converter for bedside X-ray unit, 220-volt, direct current.			
	1582	Fluoroscope, 11 by 14 inches, special folding with stand for bedside unit.			
	1583	Auto transformer for bed side unit for 220 volts, alternating current.			
	1604	Gasoline electric set (Delco)			
	1614	Portable unit instrument box with contents.			

Current conditions:

A. C. or D. C.................... Voltage.................. Cycles..................

Phase..................... Two or three wire....................

Has there been indicated in the quantity column above a zero when none of a particular item is on hand? ....

Has mention been made in remarks column of all items due on unfilled requisitions? ....

Further remarks.....................

....

Roentgenologist in Charge.

(*Letter to roentgenologist* (*through commanding officer* ....), *Surgeon General's Office, November 9, 1918.*)

X-Ray Plates and Films.

1. There will be established at the Army Medical Museum a library of X-ray plates and films.

2. There have accumulated at the various military hospitals many plates of interesting and rare pathological conditions, which should be preserved and catalogued so that they will be available for shipment to the Army Medical Museum upon order.

3. As these roentgenograms are part of the clinical records of patients, they must be sent only on order and must in all cases be plainly marked with the name and number of the patient so as to permit positive identification.

4. No roentgenograms shall be sent except when accompanied by abstracts or copies of the clinical records, including the laboratory and post-mortem findings.

5. It is therefore directed that selection be made of all rare and interesting roentgenograms in your hospital, that they be grouped ready for transmission to the Army Medical Museum upon receipt of order only, that they be plainly marked for identification and abstracts of the clinical records prepared to accompany them, and upon completion of this duty that notification be sent to the Surgeon General, attention of X-ray Section, that these instructions have been complied with, stating briefly the number and type of roentgenograms ready for transmittal.

6. Roentgenograms of surgical conditions, pulmonary and cardiac conditions, gastrointestinal and genitourinary pathology, and the various malignancies, particularly of bone, are desirable.

(*Letter, Surgeon General's Office, December 19, 1918.*)

X-Ray Films.

1. X-Ray films alone were shipped to the American Expeditionary Forces on account of ease of transportation, freedom from breakage, decreased cargo space, etc. These films are very satisfactory when properly handled, giving excellent results.

2. Cessation of hostilities leaves the supply depot with large quantities of X-ray film coming in on contracts previously placed. These quantities considerably exceed those necessary for use by the expeditionary forces.

3. You are, therefore, requested to inform the officer in charge X-ray laboratory, your hospital, that requisition should be made for films in place of plates, particularly in size 10 by 12 and 14 by 17.

4. Attention should be given to obtaining proper dark-room supplies for the correct method of handling these films. Film holders for exposure, if not on hand, should be requisitioned for; also film holders for development in sufficient quantity. Where requisition is not made for films, a proportion of films will be substituted by the depot for plates called for on requisition.

(*Cir. Letter No. 49, Surgeon General's Office, January 23, 1919.*)

Monthly Report.

1. Attached monthly report form is for record of work done in the X-ray department.

2. Make three copies—one to the Surgeon General's Office, Section of Roentgenology, one to the commanding officer, and one to be retained.

3. To be forwarded prior to the 5th of each month for the preceding month.

4. Note all changes of personnel, giving dates of arrival and departure of both officers and enlisted men.

5. Rating of officers and enlisted men will be as follows: 1, 2, 3, 4, 5 refer to the class of work that the individual is capable of performing. First class implies a man who is capable of taking charge of an important laboratory. Second class implies a man who would either be suited as an assistant in an important laboratory or as the chief of a less important one. Third class implies

a man who would serve either as a chief of a post laboratory or as second assistant in a large laboratory. Fourth class implies a man who would be suited to serve only as an assistant in a less important laboratory. Fifth class implies a man without experience, qualified only as an assistant in a small laboratory. The first three classes will possess roentgen and clinical diagnostic ability. The last two would probably have little ability in roentgen diagnosis.

Enlisted men.—A man rated as first or second class will be able to install and repair apparatus, make exposures, and work independently. Third to fourth class—a man thus classified would be able to make exposures but would not be able to work independently. Fourth to fifth class implies a man able to do dark-room work and assist with exposures but not able to work independently.

6. Note all changes in apparatus—new received, breakage, new apparatus needed, troubles with plates, film, current conditions, delay in receiving supplies, etc.

MONTHLY X-RAY REPORT FOR MONTH ENDING ...., 19..

Station......................................

Number of exposures	
Fluoroscopics	
X-Ray films	
Dental films	
Plates	

Anatomical classification of cases examined.

Accessory sinuses	
Bones and joints	
Pulmonary	
Cardiovascular	
Foreign bodies	
Gastrointestinal	
Head	
Pelvis	
Spine	
Teeth	
Urinary tract	
Miscellaneous	
Total examinations	

Apparatus.

Received.	Unserviceable.	Broken.

Remarks.

....

....

....

Number of patients examined	
Monthly admissions to hospital	
Daily average number of patients in hospital	

PERSONNEL REPORT.

Name						
Rank						
Duty						
Assignment						
Arrival						
Departure						
Rating						

....

Officer in Charge.

(*Cir. Letter No. 101, Surgeon General's Office, February 21, 1919.*)

History of Roentgenological Service.

1. A history of the roentgenological service at each base hospital, general hospital, camp, post, or other station will be submitted by the officer in charge, Section of Roentgenology, to the Surgeon General United States Army, not later than April 15, 1919.

2. This history should not be limited to the time of service of the present incumbent but should include the period from the beginning of the war. The report received will go on record as the official history of the X-ray service at the station from which it is sent.

(*Cir. Letter No. 120, Surgeon General's Office, March 4, 1919.*)

X-Ray Material for Army Medical Museum.

1. A considerable number of plates and films of interesting pathological conditions have been received at the Army Medical Museum in response to previous letter of advice.

2. If continuous, rather than intermittent, attention be given to this matter, it is believed that more satisfactory results will be obtained. It is directed, therefore, that to each monthly report of the activities of the X-ray department, which you will continue to furnish so as to

reach this office not later than the 5th of each month, for the preceding month, there be attached list of plates or films made during the month covering any of the conditions enumerated below. Plates so listed should be grouped together with abstracts of their histories so that they can be sent to the museum at once when request for same is made. It is desired that plates showing the following conditions be collected:

Tuberculosis (early).
Pulmonary abscess.
Pulmonary malignancy.
Miliary tuberculosis.
Lung syphilis.
Anthracosis, etc.
Pleural adhesions.
Diaphragmatic hernia.
Hodgkins disease.
Brain abscess.
Foreign bodies within the skull.
Fractures of the skull.
Pituitary disease.
Acromegaly.
Brain tumor.
Bone malignancy.
Bone syphilis.
Osteomyelitis.
Tuberculosis of joints, especially shoulder, ankle, and wrists.
Kidney and gallstones.
Spinal lesions other than T. B.
Anomalies, deformities.
Rare fractures and dislocations.
Yaws.
Bone grafts, plates, etc.
Foreign bodies of unusual size or location, particularly when causing no disturbance.
Gastric and duodenal ulcer.
Diverticula of esophagus.

(*Cir. Letter No. 200, Surgeon General's Office, May 5, 1919.*)

Uniformity of Operation of X-Ray Laboratories.

1. The following methods of procedure, having proved satisfactory, are recommended for adoption in your laboratory:

2. Each patient examined should be given a number. Every subsequent plate made of this patient should bear the same number.

3. Where possible, as in examinations of the wrist or elbow, two positions should be made on the same plate, one-half the plate being covered during each exposure.

4. After a plate has been diagnosed and the findings recorded, the date of the exposure should be written on the plate.

5. Plates or films should be filed numerically in negative preservers and by sizes. The various sizes should not be placed in the same pigeonhole.

6. Three months' supply of expendable materials should be kept on hand, monthly requisitions being made for replenishment thereof.

7. Plates and films bearing the lowest emulsion numbers should be used first, these being the oldest. Care must be taken that films and plates are not permitted to remain in the hospital supply department or in the laboratory stock room until the date of expiration approaches. If inspection of stock room and supply department, which should be made biweekly, reveals the presence of any considerable stock of plates or films, expiration date of which is approaching, notification should be given the zone supply center by the supply officer, and authority requested to return such plates or films to depot for re-issue.

8. Due to difficulties previously experienced in receiving supplies, most departments have been found overstocked. There is no longer any necessity for holding supplies. When requisition has been made for an article and the receipt thereof delayed, and the same article again requisitioned for, the second requisition should always be marked "previously requisitioned." Otherwise, duplication of order may be received.

9. Reports from inspectors show waste of electrical current in many laboratories. All illuminating boxes when not in use should be darkened; motors and fans turned off when not needed.

10. Form 551 should accompany each patient sent to the laboratory for examination and the roentgenologist should insist that this form be properly filled out by the proper officer. If incompletely or improperly made out, this form should be returned for completion.

11. A cross index should be established and kept up to date. This cross index should not only show pathology, but also anatomical location. The number and size of all plates filed should be shown on the card index. In order to economize time and effort, it is well to key plate sizes; thus, 14 by 17 plates should be keyed as size A; 10 by 12, size B; 8 by 10, size C; 5 by 7, size D. Films should be indicated by a small f; thus, 2fB 2204 would indicate there were filed two films, 10 by 12, of case number 2204.

12. It is suggested that wherever possible any previous roentgenograms of the patient should be inspected at the time of diagnosing the latest exposures.

13. Dental films may be easily kept track of during development by attaching to the film holder a small price tag on which is written the number of the patient of whom the films were made.

14. All plates or films leaving the X-ray department on request of medical officers should be receipted for by the responsible officer.

15. Confusion constantly arises due to medical officers and supply officers asking for apparatus and supplies under designations other than those officially given. Attention is invited to List of Staple Medical and Surgical Supplies, Part IV, X-Ray Apparatus and Supplies, copy of which has been furnished for your information and additional copies of which may be obtained on request. Requisition should be confined to the apparatus and supplies contained in this list.

16. There is attached sheet covering information which should be furnished to all officers on medical and surgical service in your hospital concerning the workings of the X-ray laboratory, together with suggestions for information of the enlisted personnel.

REGULATIONS FOR X-RAY DEPARTMENT.

[Subject to modifications according to local conditions.]

The working hours of this department are from 8 to 11.30 a. m., and 1 to 3 p. m. Emergency work will be done at any time and a provisional diagnosis made from the inspection of the wet plate as quickly as possible. Form 551 should be marked "Emergency" where this is desired. In cases other than emergency, Form 551 should be made in duplicate and sent to the department not later than 4 p. m.

The patients will be telephoned for, or the charge nurse notified as to the time to send them to the laboratory. Form 551 must be fully and completely filled out or it will be returned for completion.

Gastrointestinal and fluoroscopic work will be done on Tuesdays and Thursdays. Special instructions will be given by the department for the preparation of patients for this examination. Twenty-four hours' notice is required for gastrointestinal examination.

Plates other than emergency are inspected and diagnosed at the completion of the day's examination. Reports will be returned to point indicated on Form 551 by 10 a. m. of the following day.

A daily clinic will be held at the time convenient to the chiefs of departments. Officers referring cases for examination are invited to be present at this time to inspect the plates. A general discussion of X-ray findings in relation to other clinical findings is invited. The officer referring the patient is expected to furnish all clinical data.

A thorough cleansing of gastrointestinal tract must precede all abdominal examinations.

Plates or films may not be removed from the department except by permission of the officer in charge. A receipt will be given for all plates so removed signed by the officer requiring them.

Where operation is to be performed upon a patient who has been previously examined in this laboratory, a list of the plates desired should be furnished the day previous to operation.

No plates or films or reports thereon will be shown to patients or their friends, and no discussion with patients, or giving information to patients, will be permitted in this department. If such request be made, the patient, or his friend, will be courteously referred to the ward surgeon for such information.

INSTRUCTIONS FOR ENLISTED PERSONNEL.

[General care of the X-ray department.]

This department must be ready for inspection at any time.

All plates made must be developed before closing for the day.

All apparatus, wires, switches, etc., shall be wiped off daily with a cloth slightly moistened with kerosene. The inside of all machines is to be cleaned weekly; all bearings and brushes inspected at this time. All motors, bearings, and other parts requiring lubrication shall be oiled weekly.

Illuminators shall be kept clean inside and out.

Floors shall be swept every morning; all windows cleaned as often as necessary.

The typewriter shall be kept covered when not in use.

All lights shall be turned off when not needed.

Report for repair all electrical troubles at once.

Remember the fire risk. Familiarize yourself with the hospital fire regulations.

Watch that no person shall approach any part of his body nearer than 10 inches to any part of the high-tension apparatus, either end of the X-ray tubes, or the connections thereto. Serious injury or death may result from failure to constantly observe this precaution.

(*Cir. Letter No. 211, Surgeon General's Office, May 15, 1919.*)

Shipment of X-Ray Negatives.

1. Memorandum from Col. Charles F. Craig, curator, Army Medical Museum, calls attention to the fact that many of the boxes of X-ray plates received at the museum have been very insecurely packed, and many of the plates are either broken or badly scratched. This condition is general with boxes from almost every camp.

2. It is directed that in preparation of X-ray negatives for shipment to Army Medical Museum, the plates be securely braced within the boxes in order that they shall not be free to move upon each other or within the boxes.

(*Cir. Letter No. 225, Surgeon General's Office, May 26, 1919.*)

Detail for Instruction in X-Ray Manipulation and Technique.

1. It is requested that the names of suitable enlisted men, Medical Department, in order of merit, who are believed to be suitable material for training in X-ray manipulation and technique, be furnished this office.

2. It is proposed to have a limited number of men trained at the Army Medical School, Washington, D. C., and upon completion of the course of instruction that they be sent to stations with a view to instructing other men in the rudiments of X-ray technique.

3. No enlisted man of the Medical Department not of the permanent force will be considered, and no one above the grade of sergeant will be recommended for the assignment. It is desired that suitable men who have recently reenlisted be recommended, if practicable.

(*Cir. Letter No. 259, Surgeon General's Office, July 17, 1919.*)

VETERINARY SERVICE.

Instructions to Veterinary Officers in the Remount Service.

Veterinary officers detailed to remount service should exert themselves in every way possible to protect remounts against infection with influenza, strangles, and other acute febrile diseases. There are three principal lines along which their efforts should be directed, namely: (1) Arranging for the repeated cleaning and disinfection of stables, corrals, cars, railroad pens, and chutes used by the animals; (2) the institution of proper hygienic and therapeutic measures, including the administration of protective vaccines and sera; and (3) recommending methods of handling and transporting the animals which will have a tendency to conserve their strength and thus help them to resist infection.

1. It is the duty of veterinary officers to see that corrals, stables, and yards where animals are assembled for inspection are in a sanitary condition and that they are properly cleaned and disinfected as often as may be necessary; also that cars furnished for the transportation of remounts are cleaned and disinfected. Where inspectors of the Bureau of Animal Industry are available, they may be requested to supervise cleaning and disinfection. All cars must be inspected and passed by Bureau of Animal Industry inspectors or by veterinary officers. The stables and corrals in which horses and mules are collected for shipment to the live-stock centers, the stables at local points where animals are offered for inspection, and the railroad stock pens in which animals may be unloaded during shipment for food, water, and rest must also receive consideration as possible sources of infection, and when veterinary officers have any reason to suspect that those pens are infected they will make recommendations regarding their cleaning and disinfection to the officer in charge of the remount zone, sending a duplicate copy to the Surgeon General of the Army. The unloading chutes, alleys, and corrals at remount depots should also be frequently cleaned and disinfected, especially after they have been used by diseased animals. Experience has demonstrated that good sanitation is a very important factor in the control and repression of the infectious diseases of the horse and mule, and veterinary officers should therefore regard the institution of proper sanitary measures as a very important part of their duty.

2. Immediately after the completion of the mallein test at the purchasing point, each animal found to be free from glanders will receive an injection of hyperimmune anti-influenza serum. After arrival at destination, every animal which does not exhibit symptoms of disease will receive 2 c. c. of the prophylactic vaccine prepared by the Army Medical School and a second injection of 2 c. c. of the vaccine five to seven days later. If the mallein test is to be applied immediately after the arrival of the animals at the remount depot, the injection of the vaccine will be postponed until the mallein test is completed.

The veterinary officer making the injection of serum will prepare a report in duplicate, showing the date of injection and the preparation used, the date and place of shipment, and the number of animals. One copy of this report will be forwarded by mail to the senior veterinary officer at the destination of the animals and the other copy will be attached to the health certificate and sent by the attendant with the shipment. The veterinary officer at destination will attach to this report a statement of the date of arrival of the shipment where unloaded en route; the condition of the animals on arrival; the dates of the first and second injection of vaccine; the number of animals which subsequently exhibit symptoms of influenza, strangles, or contagious pneumonia and the number of those which recover; and send both reports to the Surgeon General of the Army within one month after the arrival of the shipment. The report of the mallein test, or a copy thereof, will be sent in at the same time.

A supply of the prophylactic vaccine may be obtained from the Army Medical School, Washington, D. C. Requisition for hyperimmune anti-influenza serum will be made on Form 35 (in quadruplicate) to the nearest medical supply depot or to the Surgeon General of the Army.

The vaccine should be kept on ice in the warm season of the year and protected from freezing in winter-time; great care should be exercised to protect the contents of the bottle from contamination when it is opened. In opening the bottle, remove the paper cap, immerse the neck of the bottle for about one minute in a 5 per cent solution of carbolic acid, and then remove the stopper. The fingers should not be permitted to touch the neck of the bottle or the part of the stopper which goes into the bottle. The stopper should not be laid down or permitted to come in contact with any object. After withdrawing the required amount of vaccine with a sterile hypodermic syringe and needle, replace the stopper immediately, tie the paper cap over the top, and return the bottle to the ice box. This vaccine is for use only as a prophylactic against strangles and the complications of influenza and contagious pneumonia; it is not to be used in the treatment of these diseases. It should be thoroughly understood that the use of the vaccine and serum does not relieve veterinary officers of the duty of instituting or recommending proper sanitary and hygienic measures and applying suitable medicinal treatment.

3. If animals are carefully fed and watered and are not kept on railroad cars for long periods, their strength will be conserved and they will be in a better condition to resist the effects of infection than if they are subjected to long railroad journeys and are not fed and watered at suitable intervals. It is also important that animals should receive fresh water and be fed in clean troughs and not be compelled to consume water and feed which may have been contaminated by discharges from diseased animals. Veterinary officers will make appropriate recommendations to the officer in charge concerning these matters whenever such action appears necessary and will forward a copy to the Surgeon General of the Army. When the matter is not within the jurisdiction of the officer in charge, the recommendations will be sent direct to the Surgeon General of the Army.

Veterinary officers at remount depots will endeavor to establish a system of quarantine, isolation, and disinfection which will prevent the spread of these infectious diseases and to this end will make recommendations to the officer in charge whenever necessary. The plan to be recommended is as follows: Certain corrals adjoining the unloading chutes should be set aside for animals received at the depot. New animals should be held in these corrals for at least three weeks, being observed closely for symptoms of disease, especially communicable disease. Animals showing symptoms of communicable disease should be immediately removed to corrals or wards in the hospital set aside for the different communicable diseases. Both sets of corrals and the hospital wards should be so located that animals to be shipped or driven out of the remount depot can be driven to the loading chute or to the exit gate without coming in contact with any of the fences of these corrals or hospital wards. The feed troughs and water troughs in these inclosures should be cleaned, scrubbed, and disinfected daily, using as a disinfectant 1 part of formaldehyde solution in 19 parts of water, or other disinfectant approved by the Bureau of Animal Industry. The feeding and watering should be conducted with due regard to avoiding the carrying of infection from the quarantine and sick corrals to other corrals by wagons, harness, halters, buckets or other stable equipment, or by the personnel. The animals should be fed and watered regularly and should be handled as quietly as possible in order to conserve and increase their strength; they should be graded according to their condition, the weaker animals being separated from the stronger. All animals should be kept in the open air as much as possible. After the quarantine period on a lot of animals in the quarantine corrals has expired and all animals have been removed, the corrals should be cleaned and disinfected under the supervision of a veterinary officer.

Until special forms are issued, reports will be made on the official letter paper of the War Department.

(*Cir. Letter No. 1, Veterinary Division, Surgeon General's Office. Undated.*)

Precautions to be Taken Against Glanders Infection.

Recently glanders was discovered among a number of horses employed by contractors in construction work at one of the cantonments, and upon investigation it was discovered that some of those infected had been stabled in one or more of the buildings attached to the auxiliary remount.

At each camp the senior veterinary officer will make an investigation to determine if horses pertaining to the contractors, or other unauthorized animals, are stabled in buildings which are intended later to house public animals. If such is found to be the case, they will make recommendation to the commanding officer, through proper military channels, that this practice be discontinued, unless the animals are subject to an inspection and the mallein test and are found to be free from glanders or other communicable diseases.

The buildings, water troughs, feed boxes, and hayracks used by such animals should be thoroughly cleaned and disinfected, under the supervision of a veterinary officer, and in this connection approved disinfectants should be used.

A copy of the recommendation to the commanding officer should be forwarded to the Surgeon General of the Army.

(*Cir. Letter No. 2, Veterinary Division, Surgeon General's Office. Undated.*)

Reports on Influenza.

1. Shipping fever, as understood by the average horseman, covers such diseases as pinkeye, influenza, strangles, pneumonia, and the principal complications that accompany these diseases. Where large numbers of horses are congregated, this class of diseases is very common. The records show that more equines die from these diseases than from all others combined. They are true infectious diseases. Environment has much to do with their spread, Long railroad journeys, excitement, irregular watering and feeding are among the most important predisposing causes. If ideal conditions could be provided, it is believed that these diseases could be prevented, and a special effort should be made at the present time to do so. At present sale pens, stockyards, cars, etc., are being disinfected under official supervision. This, of course, is important, and veterinarians should use their greatest efforts to see that the work is done thoroughly and frequently. Where the disease is discovered in the beginning, if proper measures are adopted the death rate should be very low. The daily use of the thermometer is highly important. No animal should be started on a long journey with an elevated temperature. The usual plan of providing hay and grain for several feedings at one time should be discontinued. Food and water that have been soiled by animals that are infected are among the most fruitful sources of contagion. It is more economical to provide only one feeding at a time and remove promptly any portion of a meal that may be left. The mangers and watering troughs should be frequently cleaned and disinfected.

2. There is no specific treatment for shipping fever. Treatment should be directed toward preventing it. Very little medicine will be required if proper attention is given to rest, feeding, watering, sanitation, and ventilation.

3. The Surgeon General is very desirous of learning the true condition of affairs in reference to this common disease. Will you kindly furnish him with the desired information by filling out the attached questionnaire, and return it to this office at your earliest convenience?

(*Cir. Letter No. 3, Veterinary Division, Surgeon General's Office, October 29, 1917.*)

General Information for Officers Entering Service in Veterinary Corps.

Travel.—When an officer receives an order directing him to report for duty, or to change his station without troops, he should obey the order with the least practicable delay. In time of war or public emergency, delay in complying with orders is inadmissable. If an officer is delayed in obeying an order or returning from leave of absence, he should immediately write a letter setting forth the cause of delay, and make such request as the occasion requires. In case an officer is delayed by unavoidable causes, and reports after his leave has expired, he should request that his leave be extended to cover the time during which he was delayed. Whenever it is possible to foresee an unavoidable delay, it is advisable to telegraph, stating the circumstances and requesting an extension of leave.

Reporting for field duty.—In reporting for field duty, veterinary officers should report to the adjutant of the camp or organization to which assigned in field service uniform, without side arms, and should present to this officer a copy of the order directing the duty. An officer reporting for field service should bring with him the prescribed field equipment and nothing more. By so doing he will avoid much discomfort to himself and annoyance to others. The officer having reported to the adjutant will be presented to the commanding officer and assigned to duty. He should then report for duty to the immediate commander of the unit to which he is assigned; after this he will apply to the quartermaster of the unit to which attached for tentage or tent site, in accordance with his grade and the conditions of field service.

Pay and mileage.—Pay vouchers are made out monthly on Form No. 336, W. D., and it is customary to send them to the quartermaster on the 20th of the same month covered by the vouchers. They are made in duplicate, but only one voucher is signed. Mileage vouchers are made out on Form No. 337, W. D., and submitted in duplicate, one copy only being signed. The original order of assignment to duty, or certified copy with indorsements, should accompany the mileage account. Failure to comply with the latter will result in delay in the settlement of the account. Officers are entitled to mileage from the place of appointment to their first station, which is 7 cents a mile over the usual route between the two points, except when the usual route of travel to destination in whole or in part is over land-grant roads, and then 3 cents a mile is deducted from the officer's mileage for the distance traveled over such roads. Although the Government will only pay 4 cents a mile for travel over land-grant roads, you may obtain from the quartermaster transportation over such roads and in addition collect 4 cents a mile for the distance traveled. You will be able to find out from any quartermaster the distance covered by land-grant roads over the usually traveled routes, and can then determine whether it would be to your advantage financially to buy a through ticket or to have the quartermaster furnish you transportation over a part or the whole of the route. Should you decide to take transportation, your original order will be presented with your application therefor to be indorsed, showing a statement that transportation has been furnished. By law, the United States troops are transported over some land-grant roads free of charge and over others at half rates. Whenever practicable, Government transportation is therefore always furnished via land-grant roads. Should an officer so decide, he may obtain transportation from the quartermaster for the entire trip over the usual route, regardless of the class of roads, and, in addition, receive 4 cents a mile for the distance covered.

Officers traveling with troops are not entitled to mileage, but are furnished railway transportation and sleeping-car accommodations. Actual expenses only are paid to officers for all sea travel when traveling with or without troops.

In order to draw mileage for travel the order must state the specific duty and that the travel directed is necessary in the military service.

Uniforms.—The insignia on collar of coat for Veterinary Officers' Reserve Corps will be the letters U. S. R., followed by the caduceus in bronze metal, bearing the single gilt letter V. The first letter will be placed five-eighths of an inch from each end of the collar with a suitable space between the letters and placed midway between the upper and lower edges of the collar; and the caduceus one-half inch from the letter farthest from the opening of the collar.

When the shirt is worn without the coat, the insignia will be of metal and will be worn as follows: Major—On the right side, in the middle of the collar, the letters U. S. R. (bronze) and a gold oak leaf, point up; the letters U. S. R. to be 1 inch from the end of the collar. On the left side, in the middle of the collar and 1 inch from the end, the caducous (bronze), bearing the single gilt letter V. (Rank insignia for other grades in same position.)

When, in the opinion of the commanding officer, the climatic conditions make it advisable, officers may be permitted to wear, in the field only, a short double-breasted overcoat of drab moleskin cloth lined with sheepskin and with a 6-inch rolling sheepskin collar, dyed heavier shade, and provided with two outside lower pockets. (Changes No. 18, Document 30, 1916.)

By paragraph 8 of the Special Regulations for Officers' Reserve Corps No. 43: "Reserve officers will provide themselves with field uniforms and personal and horse equipment pertaining to their grades" (horse equipment furnished to captains and lieutenants).

Service uniform.—Regulation riding gloves will be worn with the service uniform when mounted, and may be worn with the service uniform upon other occasions when the olive-drab woolen glove is not prescribed.

Hats, service.—The service hat with hat cord will be worn with the service uniform for field duty and target practice; also with rain clothes.

Identification tag.—When equipped for field duty, the identification tag will be worn under the shirt, suspended from a cord around the neck.

Insignia on collar of shirt.—When the shirt is worn without the coat, the insignia or rank will be worn on the collar.

Leggings.—Officers will wear russet leather or pigskin leggings with the service uniform, except that, unless otherwise prescribed, mounted officers and other officers when mounted may wear russet leather boots instead, and that in the field officers may wear canvas or woolen puttees.

The information given in the following table should be used as a guide in the selection of equipment. Not all the articles listed therein are necessary, but a selection should be made to suit the individual needs of the officer, depending on the time of year and location of camp or cantonment to which ordered. In most of the camps, or when ordered for duty overseas, a sheepskin-lined short coat and well-made heavy tan high-laced boots will be found very useful.

	A.	B.	C.	
Equipment	1	..	1	bag, barrack (optional).
	1	..	1	basin, canvas.
	1	..	1	bedding roll; may include clothing roll.
	1	1	2	blankets, O. D.
	1	..	1	bucket, canvas.
Clothing	1	..	1	belt, waist.
	3	1	4	drawers, pair.
	1	..	1	gloves, pair; winter use only.
	1	1	2	breeches; conditions determine as between O. D. woolen and O. D. cotton.
	1	1	2	laces, shoe, extra, pair.
	5	1	6	stockings, pair.
	1	..	1	tag, identification.
	3	1	4	undershirts.
	1	..	1	clothing roll; may be included in bedding roll.
	..	1	1	cot.
	1	..	1	lantern, combination or folding.
	..	1	1	locker, trunk.
	1	..	1	slicker.
	1	..	1	sweater (optional); use in some regiments doubtful.
Toilet articles	1	..	1	comb.
	1	..	1	mirror.
	1	..	1	paper, toilet, package.
	1	..	1	soap, cake.
	1	..	1	toothbrush.
	3	..	3	towels, face.

Articles required by Uniform Regulations, 1914:

1 canteen.
1 cup.
1 first-aid packet and pouch.
1 fork.
1 knife.
1 meat can.
1 notebook.
2 or more pencils.
1 spoon.
1 watch.

Following articles are ordinarily needed but not covered in orders.

Hairbrush.
Handkerchiefs.
Housewife.
Shaving kit.
Bath towels.
Electric torch
Fountain pen.
Stationery.
Tooth powder or paste.
Rubber boots.

Following articles are desirable:

Very thin and light mattress.
Pillow with colored pillowcases.
Pocketknife.
Can opener.
Corkscrew.
Piece of canvas or small rug (for tent floor).
Slippers.
Table and chair (to be procured at station).
Comforter.

NOTE 1.—Equipment "A" is the equipment prescribed for use in campaign, in simulated campaign, or on the march.

Equipment "B" is the equipment which, in addition to equipment "A," is prescribed for use in mobilization, concentration, instruction, or maneuver camps and during such pauses in operations against an enemy as permit the better care of troops.

Equipment "C" is the sum of equipments "A" and "B."

NOTE 2.—Clothing here listed is in addition to what is worn on the person, so does not cover gloves, hat and hat cord, overcoat.

Clothing roll (*optional*).—The canvas clothing roll contains extra clothing and toilet articles and is carried in the bedding roll.

In the clothing roll or bedding roll are one pair shoe laces, two towels, one shirt (olive drab), one pair breeches (service), one coat, two undershirts, two pairs drawers, three pairs light woolen socks, shaving kit, one housewife, six handkerchiefs, toilet paper, writing paper, envelopes, and other miscellaneous articles. Other articles carried in trunk locker.

The following copy of General Order No. 7504 is given for the information of officers designated for duty with the expeditionary forces:

WAR DEPARTMENT,
Washington, November —, 1917.

I. Until further orders, troops designated for duty with expeditionary forces in Europe may take with them the following personal baggage:

1. Each officer above the grade of captain, not to exceed the field allowance given in paragraph 1136, Army Regulations, 1913. This allowance includes equipment C, professional books, and all necessary clothing and bedding for extended field service.

2. Each officer below the grade of major and each contract surgeon, acting dental surgeon, and acting veterinarian, not to exceed 250 pounds. This allowance includes equipment C (exclusive of horse equipment), professional books, and all necessary clothing and bedding for extended field service.

3. Each noncommissioned officer down to include color sergeant and each civilian employee of the classified service, not to exceed 100 pounds. This allowance is in addition to equipment C and shall include, with equipment C, all necessary clothing and bedding for extended field service.

4. Each enlisted man below the grade of color sergeant and each civilian employee not in the classified service shall be allowed not to exceed 75 pounds of baggage in addition to equipment C. This allowance shall include, with equipment C, all necessary clothing and bedding for extended field service.

II. Containers for personal baggage shall be as follows:

1. For officers, contract surgeons, acting dental surgeons, acting veterinarians, and civilian employees, the standard trunk locker and bedding roll or similar containers of their approximate equivalent volume. Horse equipment to be packed in suitable bags or in boxes or chests of not greater dimensions than the standard trunk locker.

2. For all enlisted men, the standard barrack bag or its equivalent.

III.—1. Troops designated for European service will be provided with olive drab woolen clothing, light wool socks, overcoats, field shoes, winter gloves, wool underwear, and blankets, as prescribed in equipment tables, equipment C, as modified for European service. Mosquito bars, head nets, and khaki clothing will not be taken.

2. Only Cavalry officers serving with troops armed with the sabers will be equipped with the saber when going to Europe.

IV.—1. Officers assigned to special and technical troops organized under authority conferred by section 2 of the act of Congress "To authorize the President to increase temporarily the Military Establishment of the United States," approved May 18, 1917, will provide themselves with the following side arms: Pistol or revolver, holster, and leather waistbelt. Field glasses, compass, and whistle will be provided by those officers when on duty requiring their use.

(*Cir. Letter No. 5, Veterinary Division, Surgeon General's Office, November, 1917.*)
[524.2, A. G. O.]

Prevention of Infectious Disease Among Public Animals.

1. With a view to minimizing infectious diseases among animals intended for the Government service prior to their delivery to the purchasing quartermaster, an effort is being made, in conjunction with the Bureau of Animal Industry, to properly clean, disinfect, and keep in sanitary condition all horse sections of stockyards, collecting, feeding, and watering points and all stock cars used by the contractors furnishing the animals.

2. This effort will be to a large extent unfruitful unless the Government remount depots are promptly placed in good sanitary condition and kept free from infection.

3. You are directed to take the necessary steps to this end by endeavoring to secure the cooperation of the commanding officer of your depot in carrying out the necessary sanitary measures.

4. On arrival of "green" animals, the clearance certificate of the Bureau of Animal Industry should be among the papers of the attendant.

5. An inspection of each car should be made to determine the date of its last disinfection, which should be noted and compared with the initial date of the present shipment.

6. All animals received should be placed in receiving pens, offered hay for half an hour before watering, and closely inspected for symptoms of infection.

7. Animals exhibiting symptoms of infection should be immediately sent to the veterinary hospital, and those known to have been exposed to infection should be segregated during the period of incubation.

8. Not more than 150 seemingly healthy animals should be placed in each corral. This will facilitate inspection and will eliminate chasing and roping those that are sick. A small corral, provided it permits unrestricted movement of the animals, is preferable to a large one.

9. Shelter from rain and cold winds should be provided. Any animal whose condition indicates that it is being prevented from securing its full share of the grain ration should be removed to a corral set aside for this purpose.

10. All animals in the depot should be inspected at least once daily, with the object of segregating the sick from the well. The use of the rope in securing sick animals should not be permitted except when absolutely necessary.

11. All watering troughs should be closely supervised. An overflow attachment and good drainage should be provided. They should be drained and cleaned twice each week and more often if necessary.

12. A careful physical examination should be made of each animal before it is shipped or issued to an organization. This examination should include taking the temperature. No animal with an elevated temperature or poor appetite should be issued.

(*Cir. Letter No. 6, Veterinary Division, Surgeon General's Office, December 12, 1917.*)

Organization of Veterinary Detachments at Remount Depots, Auxiliary Remount Depots, and Animal Embarkation Depots; Promotion and Reduction of Enlisted Men.

1. The enlisted Veterinary Corps personnel for the above-mentioned depots is apportioned in grades, as follows:

Sergeants first class	..	1	2	3	4
Sergeants	1	3	5	8	9
Corporals	1	4	5	7	8
Farriers	2	12	20	30	35
Horseshoer	..	1	1	2	2
Saddler	..	1	1	1	1
Cook	..	1	2	2	3
Privates first class	2	17	21	32	37
Privates	4	35	43	65	76
Total authorized	10	75	100	150	175

2. Sergeants first class, sergeants, and corporals will be issued warrants by the Surgeon General on your recommendation, and may be reduced in the same way (authorized in advance copy G. O. 58, par. 4, W. D., June 22, 1918).

3. Farriers, horseshoers, saddlers, cooks, and privates first class may be appointed or reduced on your own authority; but written orders must be issued by you in each case and retained with

your records. All promotions or reductions will be reported to this office on date effected (authorized in advance copy G. O. 58, par. 4, W. D., June 22, 1918).

(*Cir. Letter No. 7, Veterinary Division, Surgeon General's Office, January 9, 1918.*)

Influenza.

1. The first effort to obtain information in reference to the diseases of animals made by the Veterinary Corps was in October, 1917. In reply to a circular letter sent out at that time, reports received, covering 77,000 animals, showed 12,000 sick and 800 deaths during the month. In December instructions were sent to all camps for weekly telegraphic sick reports. The regular weekly death rate report since November 30 is as follows: 0.52, 0.40, 0.37, 0.28, 0.27 per cent. These statistics are encouraging as they show a gradual decrease each week, while they are based upon an increasing number of animals and have been carried through increasingly unfavorable weather conditions.

2. The losses from influenza are yet too high as they amount to something over $100,000 per week. It is reasonable to suppose that the death rate is decreasing as a result of better methods for handling animals; not so many sick, perhaps, are purchased; fewer sick animals are issued for shipment or to units; more attention is being given to cleaning and disinfecting; more shelter has been provided. It is urged strongly that more attention still be given to precautionary measures of this kind.

3. The treatment of animals with influenza and its complications, under Army conditions, differs materially from what can be done in civil life or in handling smaller groups of sick animals. Under Army conditions it is not possible to rely so much upon medical treatment. For this reason a maximum amount of attention should be given to precautionary measures. A specific form of medical treatment that would be applicable to all cases can not be recommended for the reason that the predominant symptoms vary so greatly.

4. This office realizes that it is not possible to cure all cases of influenza with fresh air and good sanitation and that it is false economy to allow animals to die for want of medical supplies. Verterinary officers are requested to make requisitions for any supplies that are needed to reduce the death rate, and a strong effort will be made to provide them.

5. It should be possible in the future to give more attention to nursing for the reason that an enlisted personnel has been authorized for the veterinary service. Vigorous grooming is more required in sick than in well animals. Special instruction should be given in grooming, and orders issued requiring sick animals to be regularly and thoroughly groomed.

6. The Veterinary Corps will perhaps have no better opportunity during the present conflict to demonstrate its value to the Army than it has now in controlling the extensive losses from influenza. The next four months will probably be the most difficult period of the year for controlling this disease.

(*Cir. Letter No. 8, Veterinary Division, Surgeon General's Office, January 12, 1918.*)

Examination of Public Animals Prior to Purchase.

1. Veterinary officers assigned to duty with horse-purchasing boards are responsible for the health, soundness, and age of animals purchased. They are required also to apply the mallein test at the time of purchase and see that any animals becoming sick from the time purchased till they are loaded for shipment to destination are placed in comfortable quarters and under proper care and treatment and that no sick animals are shipped.

2. The average number of animals purchased in a day by each board is about 100. That is at the rate of about 10 to 15 an hour, or four to five minutes to each animal. The veterinary officer must make his examination during the time the purchasing officer is making his inspection. Four to five minutes is a short time in which to make a thorough examination, and mistakes are being made. In many cases recently reported to this office the mistakes are so glaring as to give the appearance of negligence or inefficiency. In doubtful cases more time must be given to the examination.

3. Some of the most conspicuous examples are such defects as total blindness, old age, underage, chronic lameness; and the most common mistake of all is believed to be purchasing and shipping animals that are actually sick with influenza or its complications. In one case reported during the last week animals were found dead from pneumonia at the point of destination when they had been on the road only 12 hours from the time of shipment. Many animals arrive at

destination with advanced cases of pneumonia and pleurisy and in such condition that there is reason to believe they must have been sick at the time of purchase.

4. In civil life one may be justified in taking a chance on purchasing an animal that has the first symptoms of influenza, or possibly one that has a well-developed case of it. Under Army conditions such chances must not be taken. The Government can not assume the risk of buying sick horses. If such animals, or those that are unsound from any cause are purchased, the veterinary officer is held responsible and must therefore be constantly on his guard to avoid any unnecessary risk.

5. In inspecting animals for soundness, the eyes must be carefully examined for cataracts, amaurosis, etc. In judging the age, the animal's mouth must be opened, so that the tables of the incisor teeth are exposed to view. The tongue and mouth should be examined at the same time. If the animal appears depressed, or the mucous membranes congested, the temperature should be taken. A temperature of 102° usually indicates influenza or its complications. Yet an animal may have a well-advanced case of pneumonia and the temperature be normal. For this reason a more careful examination must be made of suspicious cases. The pulse must be taken, the lungs and heart auscultated and percussed. If there is any doubt in the mind of the inspector as to whether the animal is or is not free from such infection, it should be put aside for later observation under more favorable conditions.

6. While the purchasing officer is examining the animal in action, the veterinary officer must decide whether or not he is lame. He should examine him again, immediately after he is winded, to determine the character of respiration.

7. The veterinary officer must assist the purchasing officer in every way possible. Yet he must not be hypercritical or overstep the bounds of his duties. The matter of type, quality, conformation, manners, etc., are points for which the purchasing officer is responsible. The veterinary officer is to offer no suggestions or make any criticisms along these lines unless his advice is solicited.

8. If possible, a careful description and some characteristic marking should be recorded for all animals rejected. It is a common practice for contractors to continue to present for inspection previously rejected animals. To prevent recognition, slight changes are made in the animal's appearance. Extreme care must be taken to detect such deception.

9. After the animals have been passed as sound and accepted by the Government, upon condition that they pass the mallein test, arrangements must be promptly made for applying it. A mallein test can not be completed inside of 18 hours. The mallein should be applied in the evening, so that the reactions can be observed by daylight. None should be accepted but those that pass a satisfactory test. Any that fail to pass it should be reported to the State officer who has charge of the control of transmissible diseases of animals.

10. This office will hold the veterinary officer responsible for passing for purchase any sick or unsound animals or the shipment of any such animals. In case they are accepted or shipped over the protest of the veterinary officer, this office should be informed fully and promptly of the circumstances by a report forwarded through the purchasing officer.

11. The Quartermaster General has issued instructions that all stock cars shall be thoroughly cleaned and disinfected before animals are placed on board, and that one side of each car shall be closed by building paper, roofing, or other suitable material that will effectually protect animals in transit from exposure to cold winds and storms. It is the duty of the veterinary officer, acting under the direction of the purchasing officer, to see that these instructions are carefully observed. (*Cir. Letter No. 9, Veterinary Division, Surgeon General's Office, January 22, 1918.*)

Weekly Telegraphic Statistical Report on Public Animals.

1. The reports required by Special Regulations No. 70 do not take the place of the weekly telegraphic report heretofore furnished. You should continue to make the latter report every Friday afternoon by night letter. Only four questions should be answered, as follows:

(*a*) Total number of animals.
(*b*) Total number on sick report.
(*c*) Number on sick report from communicable disease.
(*d*) Number of deaths during week.

2. This is a statistical, not a sanitary report, and should be sent to the Director, Veterinary Corps, Office of the Surgeon General, Washington, D. C., direct, not through channels. To avoid

an unnecessarily long message and at the same time leave no chance for misinterpretation, the message should be in form as follows:

Director, Veterinary Corps,
Office of Surgeon General, Washington, D. C.

Total on hand, three one four nine; sick report, five one seven; communicable disease, four two eight; deaths, fifteen.

Brown.

(*Cir. Letter No. 10, Veterinary Division, Surgeon General's Office, January 30, 1918.*)

Glanders.

Glanders, sometimes called "farcy" or "equinia," is a disease of equines especially and easily transmitted to man. In former times it was practically uncontrollable under Army conditions and caused extravagant losses, which continued to spread to animals in civil life after the war had terminated.

It is a specific communicable disease caused by the *Bacillus mallei.* The period of incubation is about 14 days. The disease may be present for months before visible symptoms appear.

We now have several reliable methods for diagnosing the disease. There can be no excuse for glanders to be extensively prevalent, even under Army conditions, at the present time.

Diagnosis.—Clinical symptoms are seldom observed until the disease has become chronic. A nasal discharge, especially if mixed with blood, ulcers, nodules, star-shaped cicatrices on the nasal mucous membrane, nonsensitive, nodular fibrous condition of the submaxillary lymph glands which have no tendency to suppurate, furunculosis, and cording of the lymph vessels, are all suspicious symptoms.

The following tests for glanders are considered reliable:

1. Ophthalmic mallein test.
2. Intrapalpebral mallein test.
3. Serological tests—
    (*a*) Complement fixation test.
    (*b*) Agglutination test.

(*b*) *Ophthalmic mallein test.*—Of the tests now in use this seems to be the most convenient.

Method of using.—The eye to be tested is first carefully examined to see that it is in a normal condition. No eye showing an inflammatory process should be tested. The method of application consists of introducing into the conjunctival sac (usually the left) with a small cotton swab, a dropper, or camel's-hair brush three or four drops of concentrated mallein. The opposite eye serves as a control. Care must be taken to prevent injuring the eye.

Unused portions of mallein remaining in opened bottles after the day's testing has been done should be discarded. Mallein thus contaminated and exposed may not only prove useless but may be injurious and bring about false reactions.

Reaction.—The installation is usually followed by a flow of tears and a reddening of the conjunctiva, conditions which have no significance and which disappear in a few hours.

The characteristic manifestations of a positive reaction usually begin from five to eight hours after the installation and last from 24 to 48 hours. A positive reaction is manifested by an accumulation of a yellow exudate at the inner canthus of the eye to which the mallein has been applied. In some cases the discharge is very slight; in others, abundant and usually associated with a severe conjunctivitis; at other times the conjunctivitis is absent. In severe reactions the eyelids may become swollen and glued together. The intensity of the reaction, however, is not an index to the extent of the disease. The test may be repeated in from 24 to 60 hours in the same or in the control eye. If a third mallein test is necessary, it should not be made in less than three weeks.

A careful examination of the eye should be made in a good light on the twelfth, fifteenth, and eighteenth hour after the application of the mallein. A certificate of negative mallein reaction should not be given in less than 16 hours after the mallein has been instilled. Mallein should be placed in the eye at such a time that the reaction may be expected to appear during the daylight.

The results of the test are recorded and interpreted as follows:

Eye unchanged	N	Negative.
Seromucous discharge	S	Suspicious.
Seromucous discharge with purulent flakes	P +	Positive.
Distinct purulent discharge	P ++	Positive.
Purulent discharge with swelling of lower eyelid	P +++	
Purulent discharge with gluing together of both eyelids	P ++++	Positive.

In recording the results of the test, great care must be taken to distinguish between an ordinary case of conjunctivitis or one resulting from an attack of influenza and the mallein reaction. This applies particularly to "green" horses suffering from the various forms of shipping fever. Both eyes are similarly affected from such diseased conditions.

Animals suffering from local or cutaneous lesions of glanders may fail to react to the mallein test. For this reason a thorough physical examination must be made of every animal tested.

(*c*) *Intrapalpebral mallein test.*—Though not in general use in the United States, this method is highly praised by officers of the English and French Army veterinary corps. The same concentrated ophthalmic mallein solution in a 0.1 c. c. dose is injected intradermally directly into a horizontal fold of the lower eyelid made with the thumb and index finger of the left hand, about 1 cm. from edge. A fine needle, 10 to 15 mm. long, is preferable, and the needle should be shoved into the skin of the eyelid about 3 mm. The injection should be made so the mallein will be placed between the derm and the epiderm. A small swelling may appear within a few hours, but this nonspecific swelling will disappear in 10 to 12 hours. In a sensitized infected animal the swelling will increase in from 10 to 12 hours and reach its maximum size in 24 to 36 hours. The bulky edema of the lower lid may even extend around and over the upper lid and completely close the eye. The edema is hot and painful. The reaction may extend to the conjunctiva and cause a congestion and mucopurulent discharge. At times the reaction is confined to the lower eyelid; the edema is localized, but persists for 24 to 36 hours. A reaction seldom remains for more than three days. In doubtful tests the injection may be repeated from five to six days. It may be necessary to use a twitch or restrain the animal by other effective means when the injection is made.

(*d*) and (*e*) *Complement fixation and agglutination tests.*—When the reaction from other tests is doubtful and where time and circumstances permit, the serological tests should be made. From a half to an ounce of blood obtained under aseptic conditions from the jugular vein of the suspected animal may be sent to the laboratory. About three days are usually required to make the test. These tests if properly made are considered the most reliable of any. They are not reliable at all times in mules or in animals that have been recently tested with subcutaneous mallein.

Control.—Immediately upon the discovery of a case of glanders among the animals, all those showing positive physical symptoms should be promptly destroyed and their carcasses disposed of in a sanitary manner. The skinning of such carcasses should be prohibited. All exposed and suspected animals should then be isolated and placed in quarantine. They should be promptly subjected to the mallein test. Animals reacting should be destroyed. Those giving an atypical reaction should be quarantined and submitted promptly to the blood test. Any animal giving a positive reaction to the blood test should be destroyed. The animals that have passed the tests should be held in quarantine and again subjected to a similar mallein test after a period of 21 days. The test and quarantine should be continued at a 21-day interval until no further reactions are obtained.

The stable, equipment, utensils, harness, saddles, clothing, etc., should be carefully disinfected after no more reacting animals are found. The stall and individual equipment of each animal destroyed should be promptly disinfected.

At points of purchase all animals inspected and found suitable should be subjected to the ophthalmic mallein test and all reactions and all suspicious reactions rejected and promptly reported to the State authority that is charged with enforcing the laws for the control of the communicable diseases of animals. A certificate of the test should be furnished to accompany the waybill of animals passed. As soon as the test is completed each animal that has passed it satisfactorily should be given an identification mark. White paint should be used for this purpose. The mark should be not less than 3 by ½ inch, placed on the right hip.

Upon arrival at remount depots, garrisons, or camps, all ("green" or newly purchased) animals not accompanied by a satisfactory mallein-test certificate and showing the identification mark should be tested with mallein before being allowed to mingle with animals free or thought to be free from glanders.

All animals should be submitted to a mallein test—

(*a*) Before they are issued by a remount depot to a unit.
(*b*) When received at a veterinary hospital.
(*c*) Before they are returned to the remount depot.
(*d*) All captured horses or mules.
(*e*) All suspicious cases of glanders wherever found in the Army.
(*f*) All that have been exposed to the disease.

Those that have passed a satisfactory re-test at a remount but not issued promptly should be marked or kept by themselves to avoid another test for a subsequent issue. No mallein re-tests should be made within a period of three weeks.

A careful autopsy should be made on all nonclinical cases destroyed that have reacted to the test and show no other symptoms of the disease.

(*Cir. Letter No. 11, Veterinary Division, Surgeon General's Office. Undated.*)

Weekly Statistical Telegraphic Report.

1. Statistics compiled in this office from weekly telegraphic reports rendered by veterinarians show:

(*a*) An undue proportion of deaths to sick under treatment.

(*b*) An impossibly low sick rate from minor injuries and disease of a noncontagious type.

(*c*) A lower sick rate from contagious disease than the death rate supports.

2. These statistics indicate that veterinarians are only showing in their returns serious cases of illness and injury.

3. In future all animals unfit for duty from veterinary causes will be included in the returns rendered by veterinarians.

(*Cir. Letter No. 12, Veterinary Division, Surgeon General's Office, February 3, 1918.*)

Methods of Appointment and Reduction of Enlisted Personnel of the Veterinary Corps as Authorized by G. O. 58, Par. 4, W. D., June 22, 1918.

1. In divisions the division veterinarian may promote enlisted men of the Veterinary Corps up to the authorized allowance and may sign warrants "for the Surgeon General."

2. In veterinary, base veterinary, corps veterinary, and Army mobile veterinary hospitals the enlisted personnel of the Veterinary Corps will be promoted by the veterinarian in charge, who may sign warrants "for the Surgeon General," except that while any of these units are in a training school any appointment must be approved by the senior veterinary instructor.

3. In veterinary detachments assigned to remount squadrons, regiments of Cavalry, regiments of Artillery, regiments of Engineers, camps, depot brigades and posts, or to any other detachment command, the sergeants first class, sergeants, and corporals will be issued warrants by the Surgeon General upon recommendation of the veterinarian. Farriers, horseshoers, cooks, privates first class, and saddlers will be appointed by the veterinarian.

4. Any veterinarian may make reductions when in his judgment the same may be necessary, provided that the officer ordering the reduction shall have the power to fill the vacancy thus created.

5. A written order must be issued in each case stating the precise date upon which the new grade takes effect. Such order must be retained in the detachment records for future reference.

6. The number in any grade will not exceed that provided by Tables of Organization.

7. All promotions or reductions will be reported to this office on date effective.

(*Cir. Letter No. 13, Veterinary Division, Surgeon General's Office, February 4, 1918. Revised August 14, 1918.*)

Monthly Report of Enlisted Men.

1. The Surgeon General directs that on or before the 5th day of each month a return of enlisted men, Veterinary Corps, be made for the preceding month on Form 47a, M. D.

2. The instructions printed on the form (except as noted in par. 3, below) will be followed so far as they are applicable to the Veterinary Corps. The report should be made in duplicate and addressed to the director of the Veterinary Corps, Surgeon General's Office, Washington, D. C.

3. In divisional organizations instead of the return being made by the immediate commanding officer of each detachment, as stated in paragraph 1 of the instructions, the division veterinarian will render a consolidated return for the division.

4. If no enlisted men, Veterinary Corps, have been assigned, nevertheless a blank return will be forwarded with a statement to that effect.

(*Cir. Letter No. 14, Veterinary Division, Surgeon General's Office, February 7, 1918.*)

Horse Lice.

1. Two kinds of lice occur on horses—sucking lice (one species) and biting lice (two species).

2. The entire life cycle is passed on the body. The eggs are deposited on the hairs and are commonly known as nits. The length of life off the body of the host is limited, and the spread of

lice results chiefly from bodily contact or through the medium of blankets, harness, etc., recently used on infected horses. Lice are usually most numerous during the late winter and early spring.

3. The sucking louse, *Haematopinus macrocephalus*, when full grown, measures about one-eighth inch in length. It has a relatively long, slender head. The head and abdomen are yellowish-gray, and the thorax brown in color. Sucking lice occur especially in the forelock, mane, and the base of the tail. As the name indicates, they are bloodsuckers. In addition to the injury caused by their bloodsucking, they give rise to itching.

4. The two species of biting lice—the *Trichodectes parumpilosus* and the *Trichodectes pilosus*—are very similar in appearance. Length, $\frac{1}{16}$ to ½ inch when full grown. The head is relatively short and broad. Color of head reddish-brown, abdomen yellowish-white with brown or black markings. Biting lice occur especially on the withers, neck, root of the tail, sides of the body, more rarely on the legs. They feed chiefly on the epidermis and cutaneous secretions. Their presence in large numbers is productive of great itching, even more marked than that caused by the sucking lice.

5. Complaints are being received from many camps about the presence of lice among animals. Lousiness should be prevented. No lousy horses should be purchased, sent to the port of embarkation, shipped abroad, or issued to units that are free from lice. Where lousy animals are found, they should be isolated.

6. In animals that are well groomed, recently clipped, and after the coat is shed normally, lice usually disappear. They cause but little trouble in warm weather. They should be destroyed, if possible, before cold weather begins. Where medical treatment is necessary, weather conditions should be favorable and an effectual remedy selected. One should consider carefully whether the presence of lice in cold weather may not interfere less with the efficiency of animals than would the adoption of necessary measures for exterminating them. Where but few animals are affected, they may be hand treated, but where many are lousy, dipping is the most practical, and a suitable dipping vat must be provided. In some cases it has been learned that dipping vats which have been constructed are too short, too wide, either too deep or not deep enough. This office has had blue prints made which give the proper dimensions of a dipping vat for horses. They are available upon request.

7. Among the various preparations for exterminating lice, either by the hand method or by dipping, the following have been found satisfactory: Lime and sulphur; a solution of liquor cresolis comp.; arsenical dip; a decoction of tobacco; Beaumont or Humboldt crude oil. The matter of using them should be determined by the expense and availability and, to a certain extent, by weather conditions. Arsenical dips are more poisonous than other dips and require more precautions in their use. It is not advisable to use crude oil in extreme temperatures, either cold or hot. Under proper conditions, oil is the cheapest and most satisfactory. One dipping with it is usually sufficient. Two dippings are necessary with other dips. It can be used in the proportion of about 1 to 3 with water. The methods for compounding and handling the various dips are described in a circular prepared by the Bureau of Animal Industry, which can be obtained by application direct to the bureau or through this office.

8. Attention should be given promptly to providing dipping vats. In addition to treating lousiness, we may soon have trouble in this country with mange, and are sure to have it in the theater of operations. The same vat can be used for handling horses afflicted with lice, mange, or both.

9. Good results have recently been obtained in treating biting lice on calves and cattle with sodium fluoride. The powder is applied with a blowgun or sifted into the coat. From 2 to 6 ounces are considered sufficient for a horse. The powder is nonpoisonous to the host, and can be left on the coat. A few Army veterinary officers are experimenting with this form of treatment at the present time on horses. If it should be found efficacious, it is believed that it will be more easily applied, and a safe form of treatment during bad weather. It is not recommended for destroying the bloodsucking variety.

(*Cir. Letter No. 15, Veterinary Division, Surgeon General's Office. Undated.*)

Official Relations between Medical and Veterinary Personnel.

1. While the veterinary service of the Army is by legislative enactment administered under the authority of the Surgeon General, Special Regulations No. 70 are interpreted in this office as placing all detachments of veterinary personnel in an independent status with reference to other Medical Department personnel. The senior veterinary officer of any organization or station, there-

fore, would bear the same relation to the commanding officer thereof as does the senior medical officer and, as a detachment commander, he has the same responsibility for the care, instruction, and discipline of his men.

2. Senior veterinary officers are not to be considered as assistants or subordinates to corresponding medical officers. It is not contemplated that correspondence, reports, or returns emanating from or pertaining to the Veterinary Corps will pass through the offices of medical officers as part of the routine channel of communication.

3. Medical supply officers in the field will issue veterinary supplies on requisitions approved by the division veterinarian, as provided in Special Regulations No. 70. The requisitions of the veterinarian at an auxiliary remount depot should be submitted to the division veterinarian for approval.

4. Although the independence of action outlined herein is expected to govern official relations between the medical and veterinary services, it should not be forgotten that the activities of both are in contact at several points and that frequently occasion arises when the medical officer, by reason of longer service and broader experience, can be of material assistance to the veterinarian. This is particularly true as regards the division surgeon and the division veterinarian. Senior medical officers will therefore cooperate with veterinarians and assist them by counsel and advice in the handling of duties which are new to many of them. While the veterinarian should welcome such assistance, he should at the same time cultivate independence and authority in his department, and avoid submitting himself to such supervisory action as would tend to destroy his initiative and sense of responsibility.

5. Division surgeons and division veterinarians will upon receipt of this letter publish its contents to all detachment and organization commanders of their respective services.

(*Cir. Letter No. 16, Veterinary Division, Surgeon General's Office, February 20, 1918.*)

Instructions Governing Use of Blank Forms Referred to in Special Regulations No. 70, Section No. 2.

1. All reports and returns ordinarily required by the Surgeon General from the Veterinary Corps are enumerated and explained herein. This circular is an interpretation of the provisions of the various paragraphs in Special Regulations No. 70, concerning which numerous questions have been raised.

2. It is noted that many veterinarians are submitting routine reports in letter form. This will cease as soon as a supply of blank forms is on hand. Wherever a form is prescribed it will be used. Additional sheets of the same size, securely attached, are authorized for extending remarks, indorsements, etc., when there is insufficient space on the form. This will not be construed to discourage veterinarians from submitting special reports on any matters which should be brought to the attention of superior authority.

3. Most reports pass through "military channels"; that is to say, the veterinarian makes a report addressed to the director, Veterinary Corps, and submits it to his commanding officer, who forwards it through successive senior commanding officers to the War Department. The veterinarian on the staff of any commanding officer ordinarily makes recommendations on Veterinary papers forwarded through the headquarters. "Official channels" are channels within the veterinary Corps. The paper is forwarded through successive senior veterinarians until it reaches the office of final action. For the veterinary officer, the only papers forwarded through official channels are those which directly pertain to or concern the Veterinary Corps and which can be finally acted on without reference to any other department of the Army, such as the personnel reports (Form 111, 47A) and change of status reports. Complete files of copies of reports and correspondence pertaining thereto will be kept by all veterinary officers who originate or forward such reports and these files will be submitted to veterinary inspectors at the time of their visit.

4. The senior veterinary officer with any command is held personally responsible that the required returns are accurately made and in accordance with regulations and are forwarded promptly. While he may delegate their preparation to an assistant or to a noncommissioned officer, they must be prepared for the signature of the senior, and he alone is responsible for all statements set forth. The senior veterinary officers attached to organizations, depots, and posts function as detachment commanders. Those in charge of mobile sections and veterinary hospital units are organization commanders.

5. The regular weekly statistical telegraphic sick and death report is to be continued. It has been forwarded heretofore by division surgeons, but will in future be sent by each division veterinarian and by the veterinarian of each remount depot and animal embarkation depot, direct to the director, Veterinary Corps.

6. *Form No. 101, Report of remount veterinary officer.*—This accompanies all shipments of animals from remount depots. It will be made in triplicate, as far as the first asterisk, by the veterinarian; two copies sent direct to the veterinarian of the organization receiving the animals and one copy retained. The two copies forwarded will be completed by the receiving veterinarian, one retained and one forwarded, through the division veterinarian, to the director, Veterinary Corps.

7. *Form No. 102, Field report of condition of animals.*—Rendered daily (erasing the word "weekly" at the top of the form) by the senior veterinary officer on duty with each mobile organization. To be in triplicate and submitted as directed in paragraph 25. The copy to the commanding officer will omit the "Analysis of cases." This report from the mobile veterinary section refers only to the animals permanently assigned, and the third copy to the commanding officer will be omitted. Form No. 102 is rendered weekly by the division veterinarians (par. 19), by veterinarians in charge of mobile veterinary sections (par. 35) and by veterinarians of remount depots (pars. 57, 58), detached organizations, and posts. Only one weekly report will be made from a remount depot to furnish the data called for in these paragraphs. The weekly report is forwarded through military channels in all cases to the director, Veterinary Corps, that of the Remount Depot veterinarians going through the commanding officer of the depot. The nomenclature of diseases under "Analysis of cases" will be strictly adhered to. Space is provided at the bottom of the page for writing any additional diagnosis which is deemed sufficiently important or numerous to be worthy of special mention.

8. *Form No. 103.*—None provided.

9. *Form No. 104, Daily report of animal casualties.*—Rendered daily by the veterinarian in charge of the mobile veterinary section only when the section is acting as an evacuating unit under actual field conditions; to be in duplicate, one copy to the division veterinarian and one retained.

10. *Forms Nos. 105, 106, and 107.*—Used only in the theater of operations and are self-explanatory.

11. *Form No. 108.*—None provided.

12. *Form No. 109, Report of animal inspection before issue.*—To be prepared in triplicate by the senior veterinary officer with each animal purchasing board (par. 68), one copy retained and two forwarded to the veterinarian attached to headquarters of the remount zone, who will complete both copies, retain one and forward one through the purchasing officer to the director, Veterinary Corps.

13. *Form No. 110, Report of meat and dairy inspections.*—Will be made out in duplicate (par. 40), and both copies submitted to the division veterinarian. The latter will make any notation or recommendations (on attached sheets) which he considers appropriate, retain one copy and forward one to the division surgeon.

14. *Form No. 111, Monthly report on personnel.*—This report called for in paragraphs Nos. 17 and 66 will be prepared in duplicate and rendered monthly for the present in the service of the interior, one copy to be retained and one forwarded direct to the director, Veterinary Corps. It will accompany Form No. 47A, Monthly report of enlisted men. Both Forms Nos. 111 and 47A are required separately from the veterinarian of an auxiliary remount depot, forwarded direct to the director, Veterinary Corps.

15. *Form No. 112, Report of animals received.*—This form is prepared by the veterinarian of an auxiliary remount depot (par. 59), in duplicate, one copy retained and one sent through the commanding officer to the director, Veterinary Corps. It will also be used as provided in paragraph 28 under the unusual conditions of a shipment being made direct to an organization. In such case it will be made in triplicate, one copy retained and two forwarded to the division veterinarian, who will retain one and forward one, through the division commander, to the director, Veterinary Corps.

16. *Form No. 113, Report on each shipment of animals overseas.*—To be prepared in triplicate by the transport veterinarian (pars. 78, 87) and completed at the end of the trip, one copy to be retained and two to be submitted to the veterinarian, port of embarkation, who will note thereon appropriate remarks and recommendations and forward one copy through the commanding officer

to the director, Veterinary Corps, retaining the other copy. A report of sanitary inspection of each animal transport on its return to port will be submitted with Form No. 113.

17. *Forms Nos. 114, 114a, 114b, 114c.*—These are identification cards. The appropriate tag should be securely fastened to the tail or mane. A supply of these forms should be kept in each unit.

18. *Form No. 115, Index card for hospital cases.*—To be made out for each animal on sick report (pars. 56, 130). The last line, showing the place, should be modified for use at remount depot or other hospitals. The reverse of the card may be utilized for extending remarks, notes on treatment, etc. The cards will be given numbers in the order in which the animals are admitted, and on the disposal of a case the card will be filed at the hospital for permanent record.

19. *Form No. 116.*—To be used wherever a receipt for animals is called for (pars. 33, 45, 118, 131); should always be made in duplicate and copy retained.

20. *Form No. 47A.*—To be submitted monthly, as required in Circular No. 14, from this office, dated February 7, 1918, by division veterinarian for the divisional personnel, and by the veterinarian of each remount depot or other detached command or post for the attached veterinary personnel.

21. *Form No. 35.*—Special requisitions should be made quarterly, but may be also submitted any time in an emergency. To be prepared in quadruplicate, one copy retained and three copies forwarded to the division veterinarian by the veterinarian attached to an organization (par. 30), or in charge of a veterinary unit (par. 37). The veterinarian of a remount depot will forward in the same manner his requisition in triplicate to the division veterinarian. Requisitions from embarkation depots go direct in triplicate to the director, Veterinary Corps; those from posts and detached commands to surgeon of the command for the present. Division veterinarians will carefully examine all requisitions, see that they are made out in compliance with instructions, check quantities asked for against the allowances of the supply tables, and after making necessary changes on all three copies will for the present submit them to the division surgeon.

22. The following paragraphs of Special Regulations No. 70 call for reports for which no regular form is prescribed. These reports will be made in letter form and a carbon copy retained in every case.

Par. 20. *Report on serious communicable disease, weekly.*—To be forwarded through division commander, addressed to the director, Veterinary Corps. A similar report will be made from a remount depot, forwarded through the commanding officer.

Par. 27. *Report on forage.*—Either verbal or written, through the immediate commanding officer to the division veterinarian.

Par. 53. *Report on general conditions at remount depots.*—These reports pass through the commanding officer of the remount depot to the director, Veterinary Corps.

Par. 54. *Report on issues of animals without mallein test.*—The copy to the division or other veterinarian will go direct; that to the director, Veterinary Corps, through the commanding officer.

Par. 65. *Report on sanitary conditions in purchasing zone.*—To be made through the officer in charge to the senior veterinary officer on headquarters of the zone and forwarded by him through his commanding officer to the director, Veterinary Corps.

Par. 72. *Report on sanitary inspection of transport.*—A sanitary inspection will be made of each animal transport previous to loading and departure and forwarded through commanding officer to the director, Veterinary Corps.

Par. 87. *Report of daily inspections and recommendations while at sea.*—Will form an inclosure to completed Form No. 113, submitted on return to home port.

23. *Personal reports, officers.*—All veterinary officers are required to report on the last day of each month, by letter, outlining briefly their duties for the month. Special reports will be made when going on and returning from leaves of absence, or changes of station, promotions, and absence from duty on account of sickness. This report goes direct to the director, Veterinary Corps, except in divisional organizations, when it should pass through the division veterinarian. Veterinarians of posts and separate commands make their reports direct to the director, Veterinary Corps.

Change of status reports, enlisted men.—All changes of status of enlisted men must be reported by the detachment or organization commander on the day of the change and forwarded in letter form to the director, Veterinary Corps. This report covers promotions, demotions, absence with or without leave, admissions to sick report and return to duty, and transfers to or from the organization. In the division this report will be forwarded through the division veterinarian.

(*Cir. Letter No. 17, Veterinary Division, Surgeon General's Office, February 28, 1918.*)

Mallein.

I. APPLICATION OF MALLEIN.

1. In order to avoid two applications of mallein at short intervals to the same eye when testing for glanders, veterinary officers assigned to purchasing boards will make it a practice to treat the left eye. By adopting this method, the veterinarians of the auxiliary remount depots will know that the left eye was employed for the test at the time of the purchase, and will accordingly instill mallein in the opposite (right) eye when the animal is again tested.

II. MALLEIN TEST TO BE APPLIED TO ALL ANIMALS RECEIVED AT AUXILIARY REMOUNT DEPOTS IRRESPECTIVE OF PREVIOUS TESTS.

1. In addition to the provisions of paragraph 54, Special Regulations No. 70, governing the Army veterinary service, and Circular No. 11, S. G. O., the mallein test will be applied to all animals as soon as practicable after arrival at auxiliary remount depots and before they are released from quarantine, as is provided in amended paragraph 15, Special Regulations No. 66, for auxiliary remount depots, and notwithstanding that they may have been tested at time of purchase and are accompanied by a mallein-test certificate.

2. These instructions do not in any way relieve veterinarians on duty with purchasing boards from the application of the mallein test to all animals at time of purchase. The test will be made in every case and the usual certificate forwarded with the shipment.

3. The senior veterinary officers of each purchasing zone are responsible for publishing to all veterinary officers attached to purchasing boards in their respective zones as much of Sections I and II of this letter as pertains to their work.

III. RECENT INCREASE OF DEATHS OF ANIMALS IN SHIPMENTS.

1. It has recently come to the attention of this office that a large number of public animals have died while in transit or soon after arrival at destination with symptoms of acute gastroenteritis. Various diagnoses have been suggested, including mycotic gastroenteritis, forage poisoning, and poisoning with vegetable or mineral agents. Whenever a number of deaths occur in any shipment or elsewhere and presenting these indefinite symptoms, an immediate telegraphic report will be made to this office, briefly setting forth the facts and recommending any action considered advisable. Careful clinical records should be kept and all cases should be posted. Specimens of important organs in which pathological changes are apparent or suspected will be properly packed and shipped to the Bureau of Animal Industry, Department of Agriculture, Washington, D. C., notifying the bureau and this office by mail at the same time. Containers as well as other assistance may be obtained from the local Bureau of Animal Industry representatives. Attendants accompanying the shipment should be required to submit sworn statements, and every circumstance bearing on the deaths should be fully investigated. While specific evidence of intentional poisoning is lacking at present, every case should be considered suspicious and all circumstances suggesting criminal activities will be carefully noted and reported. As rapidly as information is obtained and new developments are observed, this office should be notified in writing. In important cases daily reports will be made.

IV. WEEKLY TELEGRAPHIC REPORT—DEATHS.

1. The present system of reporting deaths has failed to supply accurate figures because no report is made of animals dying in transit. To correct this in future, whenever a shipment is received in which animals have died during the trip or on arrival, the veterinarian of the *receiving station* in every instance will add to the weekly telegraphic report the words, "Deaths in shipment from (1)...................., (2)...................." Blank space (1) is to be filled in with the name of the place from which the shipment originated and (2) with the number of deaths, in words.

(*Cir. Letter No. 18, Veterinary Division, Surgeon General's Office, March 30, 1918.*)

Changes in Special Regulations No. 66.

1. The following advance copy of changes which have been authorized in Special Regulations No. 66, for the government of an auxiliary remount depot, is published for the information of all concerned:

PAR. 15. *Receipt and examination of animals.*—Upon receipt of animals from any source whatever they will be unloaded as soon as possible and all examined carefully by a veterinary officer. The sick will be sent to the hospital, the others placed in isolation paddocks apart from other animals, and the ophthalmic mallein test for glanders administered to both sick and well at the earliest practicable date. Those giving a positive reaction will be destroyed and all apparently healthy animals of a shipment in which there were any reactors will be re-tested at the end of the 21 days' quarantine period. When the result of the test is indefinite or suspicious the animal will be segregated from all other animals, the test will be repeated, and a specimen of blood drawn and forwarded to the nearest laboratory where provision has been made for making the complement fixation and agglutination tests for glanders. If either the mallein retest or the blood test is positive the animal will be destroyed. (*S. R. No. 66, C. No. —, April —, 1918.*)

PAR. 16. *Mallein test.*—All animals should be tested for glanders before they leave the remount depot, and if the ophthalmic mallein test has been previously applied twice a third test should not be administered until 21 days after the application of the second test. If, on account of military necessity, any animals are issued without being tested a report will be made to the commanding officer of the organization to which sent. (*S. R. No. 66, C. No. —, April —, 1918.*)

PAR. 17. *Removal from quarantine paddocks.*—After 21 days in a quarantine paddock the healthy animals of each class will be taken out and distributed to the regular paddocks. Whenever possible only one class of animals will be kept in one of the regular paddocks. (*A. R. No. 66, C. No. —, April —, 1918.*)

[448, A. G. O.]

By order of the Secretary of War:

PEYTON C. MARCH,
Major General, Acting Chief of Staff.

2. These changes are contemplated to be substituted for such part of paragraph 54, S. R. No. 70, as is in conflict therewith. All parts of this paragraph which agree with the foregoing remain in force. In this connection see sections 1 and 2, Circular Letter No. 18, from this office.

(*Cir. Letter No. 19, Veterinary Division, Surgeon General's Office, April 8, 1918.*)

Duties of Stockyard Inspectors; Revised Instructions.

1. With reference to your assignment to .... for the purpose of improving sanitary conditions at that point in connection with yards and stables used in the purchase and forwarding of animals intended for the public service, you should insist upon all such yards and stables being placed immediately in good sanitary condition. Such disinfection as is necessary should be promptly carried out. The necessary labor and materials should be furnished by the railroad or stockyard company owning the yards. Any failure on the part of the owners to carry out your recommendations should be immediately reported to this office. The Quartermaster General has agreed to stop all shipments over railroads which fail to carry out the measures recommended.

2. Stock pens are to be thoroughly cleaned by the railroad. This is to be followed by an application of 3 per cent solution of any disinfectant running 50 per cent kresolic acid. Low places are to be filled in with small stones, cinders, or screening. Stock cars, when ordered for loading, are to be thoroughly cleaned of all litter and manure and inspected and put in safe condition for shipments by the railroads. Cleaning and disinfecting of cars must be done by the railroads at way stations and points along the line other than remount depots and auxiliary remount depots. When cars are to be loaded at auxiliary remount depots the railroads are to furnish, at a proper charge, sufficient bedding, such as sawdust, cinders, or sand, to be placed in the cars by the officer in charge after the veterinarian has satisfied himself that said cars have been properly cleaned and disinfected.

3. The ground in infected corrals must be thoroughly scraped and the scrapings removed to a safe location outside of the corrals. Strict attention should be given to the quality of the forage, and forage left by outgoing shipments should be collected and burned. Water left by outgoing animals should be removed from all troughs and the troughs properly cleaned and disinfected.

4. Hereafter whenever reports are made by veterinary inspectors, in which reference is made to conditions calling for improvement, a copy will be sent at once by the inspector himself to the zone chief of the remount service, Quartermaster Corps, in which zone the conditions exist. If the report has to do with a remount or an auxiliary remount depot a copy will also be furnished direct by the inspector to the commanding officer of the depot in question.

5. You should confer with the purchasing quartermaster in regard to the advisability of weeding out from shipments of animals in transit all those sick with infectious disease which are a menace to the other animals of the shipment.

6. The department will expect you to use every effort to lower the present morbidity rates from influenza and other infectious diseases and to cooperate in every way possible with the officers

of the remount service. If at any time the department can be of assistance to you do not hesitate to communicate with this office.

7. An inspector of the veterinary service will be through in the near future to advise with you in connection with these matters.

8. Advise this office by wire of your address as soon as you reach your station.

[3d ind.]

464 (Misc. Div.).
War Department, A. G. O., April 27, 1918.
To the Surgeon General, attention of Veterinary Division.

Approved. The inclosed revised form of instructions for stockyard inspectors will be promulgated by you and carried into full force and effect.

By order of the Secretary of War:

(Signed) Roy A. Hill,
Adjutant General.

(*Cir. Letter No. 20, Veterinary Division, Surgeon General's Office, April 8, 1918.*)

Veterinary Laboratory Work.

1. Arrangements have been completed for handling veterinary laboratory work at the Medical Department laboratories. The facilities of the laboratories of the cantonments and post hospitals are always available to the veterinarians on application to the surgeon in charge for simple microscopical and bacteriological examinations. Work of a more important scope, including the complement fixation and agglutination tests for glanders, the examination of pathological specimens of all kinds, and other diagnostic laboratory procedures, will be done at the department laboratories located at the following places:

Commanding Officer, Letterman General Hospital, San Francisco, Calif.
Department Laboratory, Fort Leavenworth, Kans.
Department Laboratory, Fort Sam Houston, Tex.
Department Laboratory, 510 Hurt Building, Atlanta, Ga.
Veterinary Laboratory, Thirty-ninth Street and Woodland Avenue, Philadelphia, Pa.
Board of Health, Ancon, Canal Zone.
Insular Board of Health, San Juan, P. R.

2. The division veterinarians and the veterinarians of remount depots, camps, posts, and other commands are responsible for having the necessary laboratory work undertaken and will see that all veterinarians under their control are utilizing fully the available laboratory facilities. Specimens will be sent to the laboratory on the foregoing list which is located nearest to each camp or post. It is desired that all specimens from the same station be sent customarily to the same laboratory. The senior officers above referred to may communicate direct with the officer in charge regarding this work and in requesting containers for shipments. Notification by mail, giving the necessary date and including request for report on findings, should be sent at the same time the specimen is shipped. The veterinarian is responsible for the proper collection of the specimens to see that they are properly packed and should carefully comply with all instructions from the laboratory.

3. After the receipt of these instructions, no further laboratory specimens will be sent to the laboratories of the Bureau of Animal Industry without special authority from this office.

(*Circular Letter No. 21, Veterinary Division, Surgeon General's Office, May 3, 1918.*)

Instructions and Information for Veterinary Corps.

I. CONTROL OF GLANDERS.

1. Glanders appears to be on the increase in this country. This may be accounted for by carelessness on the part of those applying the test at time of purchase. Whatever the cause may have been, a strenuous effort should be made to eliminate it from every Army camp as promptly as possible. The two tests that are required at present are the ophthalmic mallein test and the serological tests. Subcutaneous mallein is neither recommended nor provided for in the supply table.

2. Animals that show unmistakable symptoms of glanders, those that react to an ophthalmic mallein test or to a serological test, are required by existing orders to be destroyed promptly. In some cases it is learned that glanderous animals are kept in quarantine for the purpose of verifying one means of diagnosis by some other. This is both unnecessary and dangerous and is prohibited.

3. The only animals that should be kept quarantined for glanders are those that show doubtful symptoms or a doubtful reaction to some recognized test, and all animals that have been in contact with positive cases of glanders. Such animals should be held in quarantine until every animal in the unit, stable, or corral, has passed a recognized mallein or serological test. These tests should be repeated at periods of not less than 21 days until every animal passes a satisfactory test.

II. MANGE.

An occasional case of mange is still being reported from certain divisions and auxiliary remount depots. We have yet to learn of more than one case where such a diagnosis has been confirmed by laboratory findings of the parasite. This disease is very important and should be recognized at once if it should make its appearance. It is also important that other skin diseases should not be diagnosed as mange. All suspicious cases of mange should be isolated and treated the same as if true mange had been diagnosed. In the meantime every effort should be made to verify the diagnosis by microscopical findings, and you should not report it as mange until the diagnosis is positive.

III. VETERINARY HOSPITALS.

It should be remembered that the only veterinary hospital authorized for a divisional cantonment is one located in the auxiliary remount depot. It is realized that such a hospital is inconvenient in some cases for organizations in a division, and that it may seem impossible, under certain conditions, to move lame or sick animals to the hospital in the remount. Remount officers have reason to object to bringing animals afflicted with infectious diseases from the various organizations of a division to the remount. Veterinary officers should realize that this requirement should be complied with. It may be dangerous, inconvenient, and other plans might be much better, but there is no authority for making other arrangements at the present time.

IV. ACTIVITIES OF MOBILE VETERINARY SECTIONS.

Considerable activity is reported from certain camps on the part of the division veterinarian and the mobile veterinary section in efforts to establish veterinary hospitals in the division or hospitals under the supervision of the mobile veterinary section. This is not authorized. The duty of the mobile veterinary section is to collect incapacitated animals from the various organizations in a division and convey them to the hospital in the auxiliary remount depot. The only treatment it is authorized to give is in handling emergency cases. The experience gained in conveying such animals should be excellent training for service overseas. The distance of from 2 to 6 miles that has been reported from certain camps, between divisional organizations and the hospital in the remount, should be considered an asset rather than a handicap. In the field of activities such animals must be moved frequently more than 10 miles.

V. AMBULANCE.

It is understood that there is a two-wheeled animal ambulance in each cantonment for the use of the mobile veterinary section. Considerable complaint has been received in reference to it. This ambulance is not intended for hauling animals long distances; neither for hauling animals that are unable to stand. With a suitable harness, and the animal properly attached to the ambulance there should be no difficulty in hauling a patient a reasonable distance. In some cases it is known that the ambulance is unsatisfactory for the reason that no suitable harness has been provided. In other cases an effort is made to haul animals too far. A determined effort should be made to equip this ambulance and use it. If this is done, it is believed that it will prove as satisfactory in this country as it has in the field of activities. If no ambulance has been provided, or if one is available and can not be used, this office should be informed.

VI. ENLISTED STRENGTH.

Some organizations have not yet received their full quota of enlisted personnel. In most cases it has not been done for the reason that the veterinarian at the remount or the division veterinarian has not been sufficiently active in an effort to get them. In other cases men have not been available. An order was recently issued to commanding generals to transfer the authorized number of enlisted personnel to the Veterinary Corps. If you have not received your full quota of enlisted personnel, or a reasonable excuse why this transfer has not been made, you should notify this office promptly. Prompt action should be taken to eliminate physically unfit men.

VII. SPECIAL REGULATIONS NO. 70 AND OTHER LETTERS OF INSTRUCTION.

There is reason to believe that too little attention has been given to studying Special Regulations No. 70, Special Regulations No. 66, and circular letters that have been sent from this office. Every veterinary officer will familiarize himself thoroughly with all official communications and then follow them faithfully. Every opportunity should be taken by senior officers to familiarize their subordinates with these matters. Complete files of all orders and circulars should be carefully preserved by all who receive copies.

VIII. SUPPLIES.

1. Considerable confusion still exists in reference to getting supplies. Written requisitions on Form No. 35, M. D., should be prepared in every case. Four copies are made, of which one is retained, and the other three are submitted to the division surgeon for O. K., and forwarded to the camp medical supply officer. Attention is again called to paragraph 21, Circular No. 17, sent from this office February 28, 1918, which has not been changed.

2. You should be able to anticipate your needs for supplies for at least one month ahead. This may not be true in reference to obtaining mallein, but as much notice as possible should be given when mallein is wanted. Verbal requests on the supply office have no weight, and telegrams sent to this office only confuse matters. The supply officer is the one person who should obtain supplies for a cantonment, and unless he has a written requisition to act upon he can not be held responsible for shortages. He always has authority to wire requisitions to the Surgeon General or to purchase in the open market in emergency on the authority of the division surgeon. When such emergencies arise, the division veterinarian or the veterinarian at a remount depot should explain them to the division surgeon and obtain his cooperation. Requisitions should be confined to the veterinary supply tables, except in extraordinary cases, which should be explained in full. It should be remembered that medical and surgical supplies are scarce and hard to obtain in the enormous quantities required. Surgical instruments will be issued in chests, a set of seven issued to each auxiliary remount depot veterinary hospital. First-aid and emergency instruments will be issued in veterinary officers' field chests and in veterinary wallets and farriers' wallets. Pending the availability for an issue of these items, patience and ingenuity in improvising are necessary. Coal-tar disinfectants are not issued by the Medical Department. The importance of preventive rather than therapeutic practice should be emphasized. The tentative supply table is no longer in force officially, but may be used as a guide until the items on the new veterinary supply table become available for issue.

IX. REPORTS.

1. A veterinary officer's efficiency is indicated by the promptness and care with which he prepares and forwards the routine reports and returns. The weekly telegraphic sick report is important. All material should be collected for it, so that it can be sent punctually at noon each Friday. Every officer will follow exactly the form which has been issued from this office in order to secure uniformity and to eliminate excess words for which the Government must pay.

2. Some veterinarians are not yet sending reports on Form No. 102. These and all other blank forms have been shipped to all medical supply officers. You should keep yourself supplied by timely requisitions on the medical supply officer. This report is also important. It should be carefully studied and clearly written. A large majority of these reports are returned for correction, which indicates careless and slipshod methods on the part of responsible veterinarians.

X. INFORMATION CONCERNING DEATHS, EPIDEMICS, ETC.

1. When important conditions arise which affect the veterinary service, this office should be notified promptly by wire. Among such matters might be mentioned the death of a number of animals from forage poisoning, acute gastroenteritis, where poison is suspected, an outbreak of glanders, the positive identification of mange, etc. The Veterinary Corps is charged with handling conditions of this kind and it should have first-hand information. On several occasions recently this office has been notified by other bureaus of the occurrence of glanders and the sudden death of a large number of animals. It was several days before such information was received from the veterinary officer. Information of this kind should be sent direct to the Office of the Surgeon General. It is not necessary that it should be sent through channels.

XI. ORGANIZATIONS DEPARTING FROM CAMPS.

1. When a division or other unit leaves a camp and does not take its animals, it is contemplated, unless otherwise directed, that all veterinary personnel will accompany the organization. If the animals in the various units are to be turned over to the auxiliary remount depot, the division veterinarian or the veterinarian of an independent unit, as long as he remains in camp, will be responsible for their safe transfer. Each animal must be mallein tested immediately before being turned in to the depot or upon receipt at that place. If the test is made before the animals are turned over, any that may react to the test must be promptly destroyed. Any doubtful cases must be plainly marked and described in such a way that their identity will not be lost, and they must be kept in strict quarantine until a report is received upon the result of the serological test. A careful examination must be made of all animals turned over to assure their freedom from any other communicable disease. Infected stables or corrals must be properly cleaned and disinfected as soon as possible after being vacated.

2. If the division or other veterinarian leaves before all the animals are disposed of, his duties will devolve on the next senior, who acts as the veterinarian of the organizations remaining. If no unit veterinarians are left and there is a camp veterinarian on duty, he will attend to them. In case all veterinary officers depart from a camp, the veterinarian of the auxiliary remount depot becomes responsible for carrying out the measures outlined above. The division or other veterinarian before his departure should arrange with his successor or with the veterinarian of the auxiliary remount depot for these duties. An acting division veterinarian will be fully instructed as regards his duties and the reports and returns which he makes. Information concerning movements of veterinary personnel from camp to camp should be furnished this office promptly, but no information of any character bearing on movements or contemplated movements of troops overseas should be given out.

XII. OFFICERS ACCOMPANYING ANIMAL SHIPMENTS.

1. Whenever a veterinary officer is detailed to accompany a shipment of animals by rail, he will, on completing the journey, submit a full report thereof. The information contained in this report will be in the nature of a complete record from day to day. It will show number and kind of animals; time required to load; whether the cars submitted for the trip were properly cleaned and in good condition; date and hour of departure, of arrival and departure at each feeding or rest station and of arrival at destination; description of feeding and watering facilities and other conditions encountered at feeding and watering places; sanitation, cleanliness, and adequacy of yards provided; whether forage was carried, and its kind and quality; kind, quality, and adequacy of forage furnished at feeding stations; reasons for and duration of delays en route; names of all attendants; complete particulars regarding any sickness or deaths among the animals and their condition on arrival; any evidence of the use of poisons and suspicious circumstances in connection therewith; and all other facts which may be of interest. Should sick animals be left en route, the diagnosis and the name of the person with whom left is desired. This report will be sent to the director of the Veterinary Corps, Office of the Surgeon General, through military channels. Senior veterinary officers are held responsible for furnishing their subordinates with a copy of these instructions whenever any such may be detailed to accompany animal shipments.

(*Cir. Letter No. 22, Veterinary Division, Surgeon General's Office, May 4, 1918.*)

Instructions for Collection and Shipment of Veterinary Specimens for Laboratory Examination.

1. Special containers for the collection and transmission of material to the laboratories will upon request be furnished by the laboratory to which the material is to be sent for examination. No pathological material should be sent through the mail, except in these double, special mailing cases, which have been approved by the Post Office Department.

2. *Blood.*—For the shipment of blood specimens for the application of the complement fixation test and the agglutination test for glanders, sterile rubber stoppered test tubes should be used. Strict asepsis should be observed in the collection of all blood samples. Contaminated specimens rapidly decompose and are unsuitable for diagnostic purposes. The technique for obtaining specimens for shipment is as follows: Have on hand several large sharp syringe needles suitable for bleeding; a solution of disinfectant (5 per cent phenol liq. cresolis comp., or the equivalent); a small container of alcohol; supply of sterile test tubes; absorbent cotton; and a box in which to

place the tubes after collecting the samples. The bleeding needles should be previously sterilized by boiling and then placed in the alcohol until ready for use. The area over the jugular vein should be vigorously rubbed with a piece of absorbent cotton saturated with the antiseptic solution. The needle is inserted into the jugular vein and the first blood allowed to escape. One of the sterile test tubes is filled approximately two-thirds full and the stopper immediately replaced. The needle is removed from the vein and the area again rubbed with the antiseptic solution. The bleeding needle is rinsed well in the antiseptic solution and then placed in the alcohol and the next horse bled with the second needle, thus allowing the first needle to remain in the alcohol a short period of time before it is again used. The tubes containing the blood are at once placed in an upright position, and it is important to avoid shaking until coagulation has taken place. Each tube should be labeled, giving the number and organization of the animal. It is highly important for the laboratory to know at the time of examination whether the specimen was obtained from a horse or from a mule, and therefore each individual label should give this information by the letter "H" or "M."

The value of this method of collecting blood samples in warm weather is contingent upon their being sterile. Blood specimens should, therefore, be shipped to the laboratory immediately after collection. If this be impossible they should be stored on ice until dispatched.

3. *Blood serum.*—The blood is collected as described above in paragraph 1. The tubes are then allowed to stand in an upright position without agitation until the blood has thoroughly coagulated. It is then necessary to loosen the clot from the side of the test tube in order that it may contract and the serum separate. This is accomplished with the aid of a clean piece of wire (a steel hatpin with the point cut off answers the purpose well). After using the wire in one test tube the blood is wiped from it and is then passed several times through a flame before employing it in the next tube. This is necessary to guard against the possibility of carrying minute amounts of serum from one tube to the other on the wire. The tubes are then allowed to stand upright, in a cool place, for approximately five hours without being disturbed. At the expiration of this time the upper portion of the clot, containing mostly white cells, will be surrounded by a zone of clear serum, which blends into a lower zone of serum tinged with red blood cells which up to that time have not settled. The upper clear, amber-colored portion of serum should then be carefully poured off into the smaller test tube or phial to be shipped to the laboratory. It is desired to emphasize the point that only the clear portion of serum be poured off. Two or three cubic centimeters is a sufficient amount to forward for test. Where one endeavors to pour off all of the serum there is considerable chance of carrying over a number of red cells, which later break down and stain the serum, in some cases to such an extent as to render the specimen valueless for diagnostic purposes. Attention is called to the necessity of exercising extreme care to preserve the identity of specimens when transferring the serum from the tube containing the clot to the phial in which it is shipped. The serum may be preserved by adding 1 part of a 5 per cent solution of phenol to 9 parts of serum (approximately 5 drops to every 3 c. c. of serum).

Specimens of clear serum prepared as outlined above, though they are not bacteriologically sterile, keep well in warm weather for several weeks and usually arrive in excellent condition for test, even though considerable time is consumed in getting the sample to the laboratory. Veterinarians who have reason to expect delay in the arrival of specimens at the laboratory and in warm weather should send serum in preference to blood. Sterile test tubes for collecting blood and the small sterile phials for shipping the serum are furnished by the laboratory upon request.

4. *Solid-tissue specimens.*—In forwarding solid-tissue specimens for bacteriological examination it has been found of advantage to pack the specimen in dry borax. In the case of large specimens they may be wrapped in sterile cheesecloth upon which a layer of borax has been sprinkled. Tissue specimens so prepared should be properly labeled and forwarded in a tight box with a layer of borax on the top and bottom, providing an iced shipping container can not be obtained.

5. *Pus, fluid, and other exudates.*—Such specimens should be collected aseptically in sterile containers and sealed with wax or paraffin and forwarded to the laboratory at once.

6. *Skin scrapings.*—Specimens submitted for examination for skin parasites, such as mange, etc., should consist of scrapings from the periphery of the affected areas. Deep scrapings should always be taken as an examination of superficial scabs, dried exudates, etc., often give negative results. The specimens from skin cases should be collected in test tubes or a wide-mouthed bottle.

7. *Anthrax specimens.*—The ear of an animal suspected of having died of anthrax is all that is required for a bacteriological examination of this disease. The ear may be forwarded in a sterile test tube, or small sterile fruit jar, or packed in dry borax, as described under tissue specimens.

8. Each specimen of blood or other material should be accurately labeled for identification at the laboratory, and each lot of specimens should be accompanied by a letter setting forth the nature of the specimens and the character of examination desired. All packages of specimens should bear the name and address of the sender in the upper left-hand corner. Specimens will be sent to the nearest Medical Department laboratory. Upon completion of the examination of specimens the laboratory will report the results direct to the officer who requested the examination and will at the same time furnish a copy of such report direct to the Surgeon General's Office.

9. Reports received in this office indicate failure on the part of veterinarians to properly utilize laboratory facilities in making accurate diagnoses. The success of the veterinary laboratories is in the hands of the men in the field, and without support they necessarily fail in serving their purpose. Do not be satisfied with a clinical diagnosis in any case in which laboratory assistance will tend to throw additional light on the matter. Do not fail to send post-mortem specimens to the laboratory in order to clear up doubtful cases. The practitioner of modern veterinary medicine has no excuse for failing to make use of every facility within his reach which may result in a higher grade of scientific work.

(*Cir. Letter No. 24, Veterinary Division, Surgeon General's Office, May 28, 1918.*)

Instruction and Information for Veterinary Corps.

I. CIRCULAR LETTERS.

1. Circular letters from the Veterinary Division, Office of the Surgeon General, are essential to the veterinarian in the performance of his official duties. In the Veterinary Corps these circulars have the weight of any other instructions from higher authority and are to be obeyed accordingly. They should be carefully filed for ready reference since it frequently occurs that a letter of more recent date rescinds an earlier one. In such case the latest instructions received should govern. General veterinary inspectors are expected to report on the care shown in filing these letters and the degree of familiarity with their contents evidenced by veterinarians and their assistants.

* * * * * * *

3. The veterinarian of each division, depot, remount zone, camp, post, or detached command is directed to check his file of circular letters on the receipt of the present one and to call on this office at once for any missing numbers. Division veterinarians should give this matter especial attention before proceeding overseas. A complete file should also be maintained by general veterinary inspectors at the Veterinary Training School, in the veterinary section of the medical officers' training camps, by the veterinarian of each port of embarkation, at the veterinary laboratory at Philadelphia, and by each veterinary officer on duty in a department laboratory. Department surgeons will also be furnished a file.

II. STRENGTH OF VETERINARY DETACHMENTS AT AUXILIARY REMOUNT DEPOTS.

1. The authorized permanent strength is 6 officers and 75 men at all auxiliary remount depots, with the following exceptions: Camps—Doniphan, Lee, Meade, Wadsworth, Cody, Sevier, Wheeler, and McClellan, which are allowed 9 officers and 100 men. The animal embarkation depot at Newport News, Va., is allowed 12 officers and 175 men, and that at Charleston, S. C., 12 officers and 150 men.

2. It is the duty of the veterinarian of each depot to keep his enlisted detachment at full strength at all times. Vacancies should be filled by the transfer of suitable men, and such can generally be found with systematic effort. If, after conscientious attempt, vacancies can not be filled, the fact should be reported to this office through military channels. There is no authority for exceeding the authorized strength, and surplus men are liable to be transferred elsewhere.

3. Enlisted men physically unfit for overseas duty have been assigned to some of the depots. This office has taken the view that such men should be fit for all duty in the veterinary detachment at an auxiliary remount depot in order to justify their retention in the service. Minor defects which do not interfere with the performance of the routine duties should be overlooked. On the other hand, those men who are unfit should be discharged for disability. The veterinarian who is responsible for the efficiency of the detachment should initiate steps to get rid of men of this character.

III. WEEKLY STATISTICAL TELEGRAPHIC REPORTS.

1. This report is required from division veterinarians, camp veterinarians, and the veterinarians of auxiliary remount depots, remount zones, and animal embarkation depots only. The report will be sent whether animals are on hand or not. If there are no animals, the telegram should read, "Total on hand, zero." Likewise, if there are no sick, no infectious diseases, or no deaths the proper phrase should be followed by the word "zero." The number of deaths should be the total deaths from all causes whatsoever, but whenever animals are destroyed for glanders the information will be added to the telegram, as "destroyed for glanders, 1." The report of any animals of a shipment which may have died en route, called for in paragraph 4, Circular Letter No. 18, will continue to be made.

IV. ACCEPTANCE OF GIFTS FROM ANIMAL RELIEF ORGANIZATIONS.

1. The veterinarian of a division camp, depot, post, or detached command is authorized to accept gifts from organizations for use in the performance of his official duties under the following circumstances:

(*a*) In a manifest emergency, when some particular article is not available when needed, it may be accepted. This applies only to supplies and equipment of the official veterinary supply table. Ordinarily there should be no shortage of supply table articles. Investigations in this office have proven that the great majority of instances of shortage reported have been due to the failure of the responsible veterinarian to make proper requisition. Whenever a gift of this nature is accepted prompt report will be made to the Surgeon General, stating the conditions under which it was obtained, the reasons for the existence of a shortage originally, and what steps have been taken to prevent its repetition. Money gifts may not be accepted.

(*b*) Articles not on the veterinary supply table will not be accepted without the prior authority of the Surgeon General in each case. Requests for such authority, accompanied by a complete statement showing the necessity therefor, should be forwarded direct to this office.

2. The only organizations from which acceptance of gifts has thus far been authorized are the Red Star Animal Relief and societies operating through the American Red Cross.

V. DOURINE OR MAL DE COIT.

1. The Government has bought and may continue to acquire mares and stallions for breeding purposes. Many of these have been secured in districts where dourine or mal de coit exists. In order to make sure of freedom from this disease, the complement fixation test will be applied to all such animals and a negative result obtained before they are further used for breeding. The blood specimens will be taken only at headquarters of remount zones and auxiliary remount depots and will be sent to the nearest department laboratory. All animals of this description on hand will be tested as soon as practicable after receipt of these instructions, and any untested animals which may later arrive will likewise be tested promptly. The laboratories are preparing the necessary antigen, and the veterinarian of each remount or auxiliary remount depot should correspond with the nearest laboratory to ascertain when the work can be done and to provide himself with the necessary sterile test tubes, etc., for taking blood specimens as described in Circular Letter No. 24. (See, also, Circular Letter No. 21.)

2. All positive reactors to the test will be promptly reported to this office. Whenever stallions or mares are shipped, the veterinarian of the depot will send through military channels to the veterinarian of the receiving depot a statement showing whether this test has been made and the result.

VI. VETERINARY LABORATORY WORK.

1. In connection with the instructions in Circular Letter No. 21, paragraph 1, it is reported that some base and camp hospital laboratories are being called on for complement fixation tests, in addition to the simple laboratory examinations authorized. This will be stopped as it is contemplated to limit work of this character to the department laboratories, in each one of which there is now on duty an experienced veterinary bacteriologist.

(*Cir. Letter No. 25, Veterinary Division, Surgeon General's Office, June 17, 1918.*)

Veterinary Field Equipment and Supplies, New Type.

1. The following instructions pertaining to the field unit chests and the chests and wallets for officers and farriers are published for the information of all concerned.

2. These are now available for issue in:

Chests:

Veterinary field unit chest (proposed new par. 986, M. M. D.).
Veterinary officer's chest (proposed new par. 987, M. M. D.).

Wallets:

Veterinary officer's wallet (proposed amendment of par. 974, M. M. D.).
Farrier's wallet (proposed amendment of par. 970, M. M. D.).

3. The veterinary field unit chest is a fiber box with lid held on by a web strap, size 10 by 10 by 16 inches, weighing, filled, about 22 pounds. (A few of these chests, made of wood, much larger and weighing about 75 pounds, were issued in an emergency some months ago. None of these should be taken overseas; those on hand should be expended as rapidly as needed.)

4. The replacement of items contained in veterinary field unit chests is made through filled chests. Veterinary officers should, therefore, not requisition for individual items, but for chests complete.

5. The issue of field unit chests to auxiliary remount depots, to remount depots, or to posts is not contemplated; their issue is restricted to mobile troops and to camp organizations having veterinary units attached. A reasonable allowance per month is considered one chest to a veterinary field unit and four to the division mobile veterinary section. This allows a monthly expenditure of 13 chests in an Infantry division.

6. *The veterinary officer's chest.*—This chest is 9½ by 24 by 10 inches, and weighs, filled, about 40 pounds. It is a strong, fiber, metal-bound box provided with hinges and lock and is in fact a small trunk locker. This chest is issuable to each veterinary officer. The container is nonexpendable; the contents in part expendable, in part nonexpendable. Replacement of the articles contained therein is made by item on requisition.

7. *The veterinary officer's wallet.*—This wallet is 2¼ by 6 by 9 inches and weighs, filled, about 3 pounds. It is made of saddle leather, strong and waterproof. The wallet is issued to each veterinary officer in direct contact with animals. Container nonexpendable; contents in part nonexpendable, in part expendable. Replacement should be made by item on requisition. An advance list of the contents follows:

[Proposed amendment of par. 974, M. M. D.]

974. Wallet, veterinary officer's (leather):

Book, note, manifolding, binder	number	1
Book, note, manifolding, filler	do	1
Case, hypodermic tablets, veterinary	do	1
Case, pocket, surgical	do	1
Contents of pocket case:		
Caustic holder	do	1
Curette	do	1
Forceps, hemostatic	do	2
Forceps, hemostatic, Hopkins type	do	1
Hoof gouge	do	1
Knife, folding, with one probe-pointed bistoury and one scalpel	do	1
Knife, folding, with one sharp-pointed bistoury and one scalpel	do	1
Needles, surgical, in paraffin envelope, 6 in package	package	1
Probe, 10-inch	number	1
Scissors, dressing	do	1
Sutures, silk, braided, No. 14, in spool	spool	1
Syringe, hypodermic, 10 cubic centimeters, with extra tube of needles	number	1

NOTE.—Nonexpendable articles are in italics.

8. *The farrier's wallet.*—This wallet is 3 by 11 by 8 inches and, filled, weighs about 6 pounds. It is made of the same material as the veterinary officer's wallet. It is issued to each farrier in the service. Contents in part nonexpendable, in part expendable. Replacement should be made by item on requisition. An advance list of the contents follows:

[Proposed amendment of par. 970, M. M. D.

970. Wallet, farrier's (leather):

In cover, inside:		
Chloralum hydratum, 6 balls in paraffined paper tube	tube	1
In pouch:		
Alcohol, 1 pint, in tin	tin	1
Bandages, muslin, roller, compressed, 5 yards by 3 inches	number	10
Cotton, absorbent, compressed, 1 ounce in package	package	5
Hydrargyri chloridum corrosivum tablets, 25 in hard-rubber tube	tube	1
Iodum-potassii-iodidum, 10 ampules, in carton	carton	1
Sutures, assorted, and 3 needles, surgical, in box	box	1
Flap:		
Forceps, dissecting	number	1
Hoof knife	do	1
Scalpel	do	1
Scissors, dressing	do	1
Thermometers, clinical, veterinary, in case	do	2

NOTE—Nonexpendable articles are in italics.

9. While the field unit chests are for issue to mobile units only, the veterinary officer's field chest, the officer's wallet, and the farrier's wallet are issuable to all veterinary officers and farriers in the service, subject to the restriction that officers not in contact with animals, as the division veterinarian, the division meat inspector, the camp meat inspector, the veterinarian of an auxiliary remount depot, etc., do not require the chest or wallet for the performance of their routine duties and will not be supplied with them. Officers and farriers, except as they belong to a division or other unit proceeding overseas, will not take chests and wallets away from a station in case of their transfer elsewhere but will turn them in for the use of their successors.

10. As in the field, sick and inefficient animals should be sent to hospitals, except for first-aid and minor treatment; no equipment other than provided and described in this circular is necessary for veterinary field units. Requests for hospital equipment (slings, casting harness, etc.) coming from division, camp, and unit veterinarians indicate lack of recognition of the principles underlying the organization of the Veterinary Corps.

11. Each unit veterinarian should make requisition through regular channels for the allowance of chests and wallets, as described in the foregoing paragraphs, for the officers and men of his command. Division veterinarians should give this matter personal attention in order that organizations for overseas service may be fully equipped before departure. Old-type equipment on hand should be turned in to the camp medical supply officer and in no case taken overseas. Camp veterinarians should likewise see that the units under their supervision are fully equipped. (*Cir. Letter No. 26, Veterinary Division, Surgeon General's Office, July 2, 1918.*)

Instructions and Information for Veterinary Corps.

I. HOSPITAL RECORDS, ADMISSION TO SICK REPORT AND TRANSFER OF SICK.

1. The following instructions, having been approved by the Secretary of War, are published for the information of all concerned in advance of amendments to Special Regulations No. 70, of which they form a part. All responsible veterinarians will take prompt steps to obtain a supply of Form No. 115, M. D., and will inaugurate the system of sick records described below at once.

2. An index card for hospital cases, Form No. 115, M. D., will be made out for each animal on admission to sick report on arrival at a hospital, the cards being numbered consecutively. Any animal will be regarded as on sick report which is incapacitated for full duty by reason of physical disability. This will include animals in the hospital, in convalescent corrals, and on sick lines, but not those isolated for observation or quarantine on account of exposure to infection, unless they develop symptoms of disease or injury or give a positive or doubtful reaction to a test for glanders.

3. The blank spaces on the front of the card will be carefully filled out as far as possible, when the animal is placed under treatment, the corral, ward, or stable and the number of stall also being entered for convenience in locating the animal. The progress of the case will be shown by proper entries on the back of the card, giving date and nature of treatment and changes therein, date and character of operative measures applied, date and nature of complications and sequelæ and any other

data bearing on the history of the case or the future usefulness of the animal. For most cases, brief entries will suffice, but when the case is unusual or likely to be of scientific interest the data should be recorded in more detail. In recording diagnoses and complications, the official nomenclature will be adhered to.

4. On the termination of a case by return to full duty, death, separation from the service or transfer to a hospital in another command, the card will be completed, signed by the veterinarian in charge, and filed as a permanent record of the hospital or organization.

5. If the animal is delivered to a mobile veterinary section or transferred in any other way to a hospital in another command, an exact copy of the completed card, marked "transfer card," prepared and signed by the responsible unit veterinarian, will accompany it, to be delivered to veterinarian receiving the animal. The veterinarian in charge of a mobile veterinary section on the receipt of sick animals, will make an exact copy of the transfer card, accompanying each one, down to the signature. Should no transfer card accompany the animal, an original must be prepared. On the reverse side of both the original and duplicate will be noted the date of receipt of the animal, date and nature of changes in diagnosis, complications, special treatment, and other data necessary to make a continuous clinical record of the case while it remains in the section. The cards for animals received by a mobile veterinary section will be marked, consecutively, from one upward, and both copies of the card will be given the same serial number, also the number of the section and the division to which it pertains.

6. On the transfer of animal to a veterinary hospital (from the mobile section) the duplicate copy will be completed by the signature of the veterinarian in charge, dated, marked "transfer card" and forwarded to the receiving veterinarian. The original transfer card is likely completed by signature and placed in the permanent file of the section. Should the animal be disposed of in any other way than transferred sick, both copies of the card after completion, with suitable notation as to the disposition, are retained.

7. When an animal is transferred sick to a hospital, a transfer card should, therefore, accompany it in every case. The receiving veterinarian, after transcribing from the transfer card the data necessary to bring the clinical history down to date on the new record card, will preserve the two cards together until the case is disposed of, when the record card will be completed and both will be filed as part of the permanent hospital records.

8. The distinction between the terms "admission to sick report" and "transferred" as used in the foregoing paragraphs should be carefully noted. An animal taken sick in a unit is "admitted to sick report" and remains on sick report as long as it is cared for on the sick lines of the unit. It is "transferred" when it is removed into the jurisdiction of another veterinarian as when taken over by a mobile veterinarian or when taken direct into a veterinary hospital without the interposition of the mobile section. It is likewise again transferred when turned over to a hospital by the mobile section. A sick animal at an auxiliary remount depot is "admitted to sick report" and is never "transferred" unless it is removed to a hospital elsewhere.

9. If a descriptive card is received with a sick animal, the history of the animal will be copied on the hospital record, and when the case is terminated, a notation of the date of receipt and discharge of the animal and the condition for which it was treated will be made on the descriptive card, which will accompany the animal if returned to duty or transferred.

10. The unit veterinarian will be responsible that tags are securely attached to animals to be delivered to mobile veterinary sections and that the tag shows the number of the case and the organization from which the animal came.

11. Receipts will be given by veterinarians receiving sick animals and they will likewise obtain a receipt from the receiving veterinarian whenever the animals are turned over. These receipts will be made on Form No. 116, M. D.

II. GLANDERS AND OTHER COMMUNICABLE DISEASES.

Additional approved changes in special Regulations No. 70 cover the following points:

1. *Division veterinarian.*—Upon learning of the existence or suspected existence of a serious communicable disease among the animals in any of the organizations of the division, the division veterinarian will at once make an investigation and see that the proper action is taken to control and prevent the spread of infection. If the disease reported is glanders, he will recommend to the division commander the immediate quarantine of the animals of the unit in which it has developed or is suspected. His duties regarding the conduct of this quarantine, the reports and recommendations to be made, and all other measures to be adopted by him in controlling the disease as set forth

in paragraph (*d*) of this section will be strictly complied with. Similar action and reports are required in regard to other serious communicable diseases.

The instructions in paragraph (*b*) of this section regarding privately owned animals of contractors or others are equally applicable to such animals when admitted to the divisional area or other parts of the camp outside the auxiliary remount depot, and the division veterinarian as the senior veterinary officer present will see that they are followed.

2. *Unit veterinarian*—When animals are shipped directly from the place of purchase to organizations in a cantonment or post, the division veterinarian or other senior veterinary officer of the command will supervise their reception. The procedure regarding quarantine and mallein testing laid down in paragraph (*c*) of this section will be followed. The quarantine should be maintained in the organization receiving the animals. During the quarantine period the responsible veterinary officer will closely observe the animals for symptoms of any other communicable disease, and affected animals will be isolated in the organization, if practicable; otherwise they will be removed to the hospital or other suitable place, where they will be maintained in quarantine until recovery and until quarantine requirements for possible infection with glanders are complied with. When animals are received under the provisions of this paragraph the veterinarian will prepare a report on Form No. 112, M. D. This report will be in triplicate, one copy retained and two forwarded to the division veterinarian, who will retain one and forward one through the commanding general to the director of the Veterinary Corps, Office of the Surgeon General.

When the animals of a unit are to be turned in to an auxiliary remount depot, each one will be mallein tested immediately before being transferred or upon receipt at the depot. Reactors will be destroyed promptly and animals of an organization in which there are reactors will be regarded as suspects and quarantined as described in paragraph (*d*) of this section. If practicable, the quarantine should be maintained in the organization, but the veterinarian of the auxiliary remount depot will be consulted and fully informed of all circumstances. Any suspicious reactors must be plainly marked and described in such a way that their identity will not be lost, and they likewise will be kept in strict quarantine from all others until a report is received on the result of the serological test. A careful examination must be made of all animals turned in to assure their freedom from any other communicable disease. Infected stables or corrals must be properly cleaned and disinfected as soon as possible after being vacated. The division veterinarian, or the officer acting as such, as long as he remains in camp will be responsible for carrying out these instructions. If directed by proper authority to leave before the animals are tested and turned over, he will transmit full information and instructions to the next officer responsible under these regulations. If all the veterinarians of the division depart, the camp veterinarian, if there be one, otherwise the veterinarian of the auxiliary remount depot will be responsible for compliance with the foregoing instructions. It is necessary that division or other veterinarians cooperate fully with the veterinarians of auxiliary remount depots in these measures to secure satisfactory results.

3. *Veterinarian, auxiliary remount depot.*—(*a*) He will make suitable recommendations to the commanding officer as to the best method of disposing of animal carcasses and will supervise the operation of the plan adopted. Contracts with civilians for the disposal of dead animals should specify removal without delay on receipt of notification. If the carcasses are to be burned or buried by the military authorities, the work will be done with all possible expedition and under sanitary precautions. Animals with severe pain from an incurable condition and those found to be affected with glanders will be immediately destroyed. No animal with positive signs of glanders will be held for further testing nor will those reacting positively to the mallein test be held for further test of any kind. Other sick or injured animals which are not likely to again become serviceable will be disposed of according to Army Regulations. (Par. 1073, as amended, C. A. R., No. 58, July 6, 1917.)

(*b*) The veterinarian will advise the commanding officer in regard to the prevention of disease among the animals at the depot and especially in regard to the control of communicable diseases. Animals owned by contractors or other private parties, whether or not stabled in the depot, and allowed therein for any purpose will be subject to the same inspection by the veterinarian as are public animals. Evidence will be required of their freedom from glanders or other communicable diseases. When the application of the mallein test to such animals is deemed advisable by the veterinarian, he will so report to the commanding officer, and should the owner refuse to consent to their being tested they should be wholly excluded from the depot. In the same way, cases of glanders or other suspects may be excluded. If a case of glanders is discovered amongst such animals while they are at the depot, the procedure as regards quarantine, mallein and other testing, and the destruction of infected animals will be the same as for an infected corral or organization of public animals. This provision should be explained fully to private owners and their agreement thereto exacted before the introduction of their animals into the depot area is permitted.

(*c*) Upon receipt of animals from any source whatsoever, they will all be examined carefully by a veterinary officer, and if in cars will be promptly unloaded. The sick will be sent to the hospital, the others placed in isolation paddocks apart from other animals, and the ophthalmic mallein test for glanders administered to both sick and well at the earliest practicable date. Those giving a positive reaction will be destroyed at once and all apparently healthy animals of a shipment in which there were any reactors will be retested after 21 days from the date of the last test by which reactors were found. It is contemplated, in other words, to hold each such lot of animals in quarantine, applying successive tests at intervals of three weeks until a test is made which yields no positive or doubtful reactions. When the results of any of the tests are indefinite or suspicious, the animal will be separated from all other animals, and the test will be repeated, and a specimen of blood drawn and forwarded to the nearest laboratory where provision has been made for making the complement fixation and agglutination tests for glanders. If either the mallein re-test or the blood test is positive, the animal will be destroyed at once. A post-mortem examination will be made of all animals destroyed which failed to show physical signs before death and the report of the findings filed with the retained records of the veterinarian. Carcasses of animals destroyed for glanders will be removed promptly from the vicinity of other animals. They may be disposed of to contractors or they will be burned or buried with proper sanitary precautions. Contractors will be warned against danger of possible infection in handling carcasses of glandered animals.

All animals should be tested for glanders before they leave an auxiliary remount depot and if the ophthalmic mallein test has been previously applied twice, a third test should not be administered until 21 days after the application of the second test. If, on account of military necessity, any animals are issued without being tested, a report will be made showing their number and kind and the designation and location of the organization to which they are sent. This report will be in duplicate and forwarded through military channels, one copy to the commanding officer of the division, detached organization, or depot to which the animals are shipped and the other copy to the director of the Veterinary Corps, Office of the Surgeon General.

Whenever by any of the approved methods a diagnosis of glanders is made in a shipment or other lot of animals received from any source, whether within the camp or outside of it, the veterinarian will immediately notify verbally or by message, confirmed the same day by letter, the veterinarian of the command from which the animals came. This should be the division veterinarian or one acting as such in the case of a divisional unit. If the case is the first one from the organization or if a new case is at any time discovered amongst the animals in a depot, a telegraphic report of the facts will be made to the director of the Veterinary Corps, Office of the Surgeon General, and stating that the veterinarian of the issuing unit has been notified as above instructed.

(*d*) On the discovery of glanders all other animals in the lot, shipment, organization, corral, stable, or other place in which the case was found will be regarded as contacts, and immediate steps taken to prevent their coming in contact in any way with clean animals elsewhere. If the case has developed in a mobile unit, all the animals in that unit will be considered contacts. The suspected animals will be segregated in a clean corral or stable and the corral or stable in which the case was discovered will be disinfected. Fences, stalls, floors, partitions, feed boxes, and watering troughs and stable utensils will be cleaned of all loose dirt, scrubbed with soap and water, and sprayed with 2 per cent aqueous solution of the cresol compound issued by the Medical Department. Infected forage and bedding will be destroyed. The suspected animals will be fed invariably and watered usually at their corral. Should occasion arise to water elsewhere, buckets will be carried and used exclusively for this purpose and access to watering troughs elsewhere prohibited. Sick animals will not be removed to any other place for treatment. All contacts will be given the mallein test. Retesting in 21 days and complement fixation tests will be done as set forth in paragraph (*c*) of this section. The quarantine will not be raised until a clean test has proven presumptively that all the animals are free from glanders. Upon being released from quarantine the animals will be turned into clean quarters and the corral or stable in which they have been kept will again be cleaned and disinfected as already described, irrespective of whether any cases of glanders have developed during the quarantine period.

The veterinarian is responsible for the early detection of glanders and for proper recommendations to the commanding officer regarding the institution of the quarantine measures prescribed herein. Should he deem the quarantine of the entire depot advisable, he should so state. He will advise when the quarantine should be removed. These recommendations should ordinarily be in writing. He should supervise the operation of the quarantine and make sure that its provisions are fully and conscientiously carried out by all concerned. From the discovery of the first case to the time when a clean test has been made and the animals have been released from quarantine, he will report weekly in writing to the director of the Veterinary Corps, Office of the Surgeon General, through military channels. This report will cover the measures adopted to control the disease, the efficacy of the quarantine, reasons for its failure in any respect, the progress of the disease, numbers tested and kinds of test, numbers destroyed, and any other information pertaining to the epidemic. All recommendations made to the commanding officer and the action taken thereon will likewise be included in this report.

4. *Veterinarians of purchasing boards.*—Veterinary officers assigned to purchasing boards will report direct to the officer in charge and act as his advisors in all veterinary matters. When more than one veterinarian is assigned to the same board, the senior will act as the veterinarian in accordance with the customs of the service. In the performance of their professional duties they are under the supervision of the zone veterinarian. In the inspection of animals for purchase, they are responsible for the detection of physical defects and evidence of disease. Whenever animals are collected for purchase or shipment, they will investigate the sanitary condition of the yards or stables and will recommend to the purchasing officer proper measures to correct defects. They will apply mallein test to all animals before they are shipped. Great care will be exercised in the inspection of animals and the use of the test in order to eliminate positive or doubtful reactors and on the discovery of such all other animals from the same lot or stable will be regarded as contacts subject to quarantine and re-testing as provided in paragraphs (*c*) and (*d*) of this section. Whenever it is impracticable to quarantine at purchasing points or at zone headquarters, the contacts will be shipped as a separate lot and will be accompanied by a full written statement from the senior veterinary officer of the board for the information and guidance of the veterinarian at the destination of the animals. The zone veterinarian, the state veterinarian, and the local representative of the Bureau of Animal Industry, if there is one, will be notified at once on the discovery of a positive or suspicious reactor and all veterinarians attached to boards will cooperate fully with the local live-stock sanitary authorities in every effort to limit the extension of infection.

5. *Notification of communicable diseases.*—The veterinarian of any command will promptly notify the state veterinarian, if there is one, of all cases of glanders or other communicable disease occurring in the command of which such authority would take cognizance were the same to occur in the community subject to its supervision.

III. ANIMAL SHIPMENTS.

Animal shipments are covered in the following paragraph which will shortly appear as an amendment to Special Regulations No. 70.

1. When animals are shipped from a remount depot, they will receive a careful examination under the supervision of the veterinarian to detect communicable disease and eliminate the sick. Stock cars submitted for their transportation are required to be cleaned by the railroads of manure and loose litter and placed in a safe condition, but not disinfected. The railroad will also furnish bedding, which will not be placed in the cars until they have been cleaned and disinfected. The veterinarian will examine the cars on their arrival and will determine the extent and necessity of further cleaning and disinfecting and will supervise this work, notifying the commanding officer when the cars are ready to receive bedding and to be loaded. The veterinarian will also make a report on Form No. 101, M. D., covering the shipment. This report will be prepared in triplicate as far as the first asterisk, two copies sent direct to the veterinarian of the organization receiving the animals and one retained. The receiving veterinarian will complete his copies, retain one and forward one through the division veterinarian to the director of the Veterinary Corps, Office of the Surgeon General. The veterinarian of a command will also fully instruct in their duties all veterinary personnel accompanying shipments of animals. A veterinary officer assigned to this duty will, upon its completion, submit a detailed report of the journey to the director of the Veterinary Corps, Office of the Surgeon General, through military channels. This report will show number and kind of animals; time required to load; suitability and cleanliness of the cars provided; date

and hour of departure, of arrival and departure at each feeding station, and of arrival at destination; description of feeding and watering facilities and other conditions encountered en route; sanitation, and suitability of yards provided; kind and quality of forage used; reasons for and duration of delays en route; names of all attendants; complete data regarding any sickness or deaths amongst the animals and their condition on arrival. Should sick animals be left en route, the diagnosis and the name of the individual with whom thus left should be stated.

IV. CAMP VETERINARIANS.

Paragraph 1 of the following will shortly appear as an amendment to Special Regulations No. 70.

1. The veterinary service of a camp is under the direction of the senior veterinary officer on the staff of the camp commander, who will be designated as camp veterinarian. His duties as regards the camp veterinary service, including meat and dairy inspection, are the same as those specified hereinafter for a division veterinarian as regards the division, and he will make the same reports and returns. He will also supply necessary veterinary service to units or organizations having no veterinarians attached.

2. The camp veterinarian is ordinarily assigned by War Department orders and is the senior officer present. The only exception to this may be a situation in which the senior veterinary officer on the staff of the camp commander for the time being is junior to another veterinary officer present for duty. In such case the former becomes ex officio camp veterinarian even though the latter has been so designated by order.

3. The reports and returns rendered by the division veterinarian are likewise required from the camp veterinarian. (See Circular Letter No. 17.) These comprise the weekly report on Form No. 102, which is a consolidation of the daily report each unit veterinarian should make to the camp veterinarian and the monthly reports on Forms No. 111 and on 47a. Sanitary reports should be made through the camp commanding officer whenever defects can not be corrected by verbal suggestions. A weekly telegraphic statistical report is required from all camp veterinarians and covering all animals in the camp exclusive of the auxiliary remount depot. This report is sent direct to the director, Veterinary Corps, Office of the Surgeon General, Washington, C. D., by night letter at noon on Friday of each week and follows the form given below.

Total on hand, three two eight four; sick report, six one nine; infectious disease, three five two; deaths, sixteen.

Brown.

V. VETERINARY SERVICE IN COMMANDS UNDER DEPARTMENT COMMANDERS.

1. The veterinary service of all units, camps, posts, or other establishments within the territorial limits of a department which, by existing orders, are placed under the control of a department commander is regarded as under the general supervision of the department surgeon.

2. Special communications and reports from unit and other veterinarians which would be sent direct to the Surgeon General in case the command were excluded from the control of a department commander (see S. G. O. No. 23, 1918) will be forwarded through the department surgeon. This applies to Forms 101, 102, 111, and 47a. The personal report of each such veterinary officer will be sent to the department surgeon and also direct to the Surgeon General. Sanitary reports, Form 110, and other papers required to pass through military channels are forwarded through the commanding officer. The weekly report of activities of veterinary officers at department laboratories and of the officer in charge of the veterinary laboratory at Philadelphia will continue to be sent. as at present, direct to the Surgeon General.

VI. UNDIAGNOSED CASES—SUSPECTS.

1. It is observed that many weekly field reports, submitted on old Form 102, M. D., show cases of mange or ringworm which are entered in the spaces designated for these affections. Attention is called to Section II, paragraph 1, of Circular Letter No. 22, which directs that every effort be made to verify the diagnosis by microscopic examination. Pending the confirmation of such clinical diagnoses, the cases should be carried on Form 102 as "undiagnosed-suspected mange, glanders, etc."

VII. REVISED FORM NO. 102, M. D.

1. Form No. 102 has been revised and generally distributed to all supply depots. The daily and weekly reports will hereafter be rendered on the new form instead of the old one. This report now contains only statistical data pertaining to the Veterinary Corps and should be forwarded

through official rather than military channels. The instructions on the back of the form should be carefully studied.

(*Cir. Letter No. 27, Veterinary Division, Surgeon General's Office, August 3, 1918.*)

Glanders—The Ophthalmic Mallein Test.

1. The results being obtained in eradicating glanders from the Army are not satisfactory. The Veterinary Corps is not held responsible for faulty conditions which are beyond its control. It is fully responsible for the inexperience, carelessness, failure to follow instructions, inaccurate observations, and hasty conclusions which have been noted and which must be eliminated before the corps can be regarded as having performed its whole duty in this vitally important work. Every effort will be made to secure the cooperation of commanding officers. In auxiliary remount depots in particular the harmonious and united activities of both the remount service and the Veterinary Corps must be utilized to the utmost to secure the best results.

2. The radical changes in the method of applying the mallein test which are outlined herein will be carefully complied with by all veterinary officers. These instructions may be regarded as interpretations of Special Regulations No. 70, as amended by Changes No. 1, and are not contradictory to those regulations. They do not, however, conform to some parts of circular letters previously issued from this office, and wherever this happens these instructions govern and the circular letters referred to are rescinded only to the extent that they disagree. In all other respects prior circular letters are in force.

3. The veterinarian of a command under the commanding officer thereof is responsible for advising when a mallein test shall be undertaken and for the supervision of all the details. He will utilize all veterinary personnel for this purpose, assigning the work of applying the test and of reading it to officers selected for their special ability. He will so arrange the work that the officer who applies the test to one or more animals will invariably make all the readings for the same animals.

4. The expression "mallein test" in these instructions includes the installation of mallein and the reading of the reaction at specified times thereafter. Unauthorized changes in the published details of the test or the removal of the animal before sufficient time has elapsed to complete the readings vitiate the test and will be carefully avoided by all concerned. A mallein test will be made—

(*a*) At time of purchase. (S. R. No. 70, C. No. 1, par. 67.)

(*b*) At the earliest practical date after arrival at an auxiliary remount depot and in every case before release from quarantine. (S. R. No. 70, C. No. 1, par. 54.)

(*c*) Before issue to any unit or shipment to any place. (S. R. No. 70, C. No. 1, par. 54.)

(*d*) On receipt at any veterinary hospital.

(*e*) Before return to a depot from a hospital.

(*f*) Before turning in to a depot by an organization. (S. R. No. 70, C. No. 1, par. 28.)

(*g*) On all captured animals. (S. R. No. 70, C. No. 1, par. 29.)

(*h*) On all privately owned animals before they are allowed to enter a command. (S. R. No. 70, C. No. 1, pars. 20 and 52.)

(*i*) On all contacts with positive reactors or with suspicious reactors held for blood or retest. (S. R. No. 70, C. No. 1, pars. 20 and 55.)

(*j*) On all animals suspected to have glanders and without physical signs.

5. Attention is called to standing instructions regarding re-testing more frequently than once in 21 days. This means that it is not, as a rule, contemplated to test animals at intervals of less than 21 days, when they have been under constant observation in the military service and although they may have been transferred several times during that period. When animals are issued to or by an organization or hospital without a mallein test by reason of military necessity or in compliance with these instructions as above interpreted, a written statement covering the facts and showing the date of last test should be submitted by the veterinarian at the place of issue to the veterinarian of the receiving point.

6. The mallein test will not be made on animals presenting definite signs of glanders, but such animals will be promptly destroyed.

7. No test will be undertaken in any place unless a clean corral or stable is ready, adequate in size to hold all the animals after being tested, and so situated by reason of double fences or intervening empty corrals that they can by no chance come in contact with glanders-free animals in another corral. Veterinary officers at purchasing points should also see that clean pens are provided.

Clean shall mean free of manure, waste, and rubbish of every kind; water troughs, hayracks, grain troughs, feed boxes, and mangers emptied, scrubbed, and disinfected; and fences, stalls, partitions, or other woodwork cleansed and disinfected. Should it be impossible to secure the corral or stable described clean as herein, after consultation with the commanding officer, this office will be promptly notified through channels and the test suspended awaiting instructions.

8. Preliminary to the test all animals of the lot will be caught up and haltered and carefully inspected and any animal showing symptoms of conjunctivitis, periodic ophthalmia, or a discharge of any sort from either eye will be removed from the others and segregated in a separate place for testing when the eye shall have returned to normal. Examination for the clinical signs of glanders will likewise be made at this time, and any positive cases will be removed and destroyed without delay. In examining for glanders the intermaxillary glands of each animal should be palpated. Examination for a nasal discharge or abscesses on every part of the body should be made. If a nasal discharge is present, make a careful inspection of each nostril and observe the presence of cicatrices or ulcers in this region.

9. The remaining animals which are to be tested will be tied short and remain under constant conservation until the test is completed. They will be fed hay the night of the test and will be given grain and water only thereafter until released.

10. The ophthalmic test will be given in the late afternoon only, and will begin at such an hour that the eyes of all the animals of the lot may be instilled by nightfall. The first reading will be made at daylight the next morning, and the test should be so arranged that approximately 12 hours shall elapse between the injection and the first reading. Therefore the eyes shall be read in the same order in which they are injected. The second reading will be made in approximately 18 hours, or near noon, and the third reading in 24 hours, or about nightfall. It is the intention that three careful readings, shall be made on every animal on the day succeeding the evening of the injection, and after the third reading the animals showing no reaction will be taken to the clean corral and released.

11. Whenever at any reading a suspicious reactor is discovered it will be tagged and will be examined once an hour until the veterinary officer has satisfied himself whether the case is positive or not. The frankly positive reactor is early detected. The mild and doubtful ones must be examined with the greatest care, and this is particularly necessary at the time of first reading at daylight. Retract the lids and thoroughly examine the entire conjunctival surface. Note the presence of discharge which has dried and adhered to the parts outside the eye. Every effort should be made to come to a definite decision in every doubtful case, and once the examiner is satisfied of his diagnosis his opinion should be final. As soon as it is determined to be positive it will be removed from all other animals and destroyed, and no excuse will be accepted for any delay in this regard. Animals purchased under conditions requiring that they revert to the seller in case of failure to pass the mallein test will, in case of such failure, be turned over to the owner and paragraph 67, Special Regulations No. 70, Changes No. 1, complied with. Post-mortem examination will invariably be made and the findings recorded. The place which the animal occupied, including its halter, feed box, and any woodwork with which it could have come in contact, will be cleaned and scrubbed and all waste remaining will be burned. The carcass will be disposed of in accordance with standing orders. (S. R. No. 70, C. No. 1, pars. 51 and 54.)

12. When reactors are deemed suspicious but a positive diagnosis can not be made, the animals will be isolated from all others and samples of blood taken and sent to the nearest department laboratory for the blood test. Within 24 to 60 hours, if both eyes are clear, the ophthalmic test will be repeated in the opposite eye. If a positive reaction is then obtained, the animal will at once be destroyed and autopsied under the precautions described in the preceding paragraph and without waiting for the report on the blood test. Should the re-test be negative, the animal will remain isolated awaiting report of blood test. If the latter is negative, the animal may be released as free from glanders. Should the re-test be suspicious and the blood test negative or indeterminate the animal will be isolated 21 days longer for further re-testing. Whatever the reaction on re-test, if the blood test is positive the case will be regarded as one of glanders and destroyed. Routine blood tests of large numbers of animals unaccompanied by the preliminary mallein test are unauthorized.

13. If any animals from the original lot are positive reactors or suspicious reactors held for blood or further re-testing, the entire lot will be regarded as contacts, kept isolated for 21 days, and then re-tested. Should the suspicious reactor prove negative on re-test and blood test, the animals may be released from quarantine. (S. R. No. 70, C. No. 1, par. 54.)

14. The ophthalmic mallein test will be applied to the left eye of all animals at time of purchase, complying fully with the instructions herein. All animals will be re-tested in the right eye on arrival at an auxiliary remount depot irrespective of any previous testing and subsequent tests will be in alternate eyes. (S. R. No. 70, C. No. 1, par. 54.)

15. Attention is again directed to paragraphs 20 and 52, Special Regulations No. 70, C. No. 1, as regards the testing of privately owned animals. These instructions are explicit and pertain not only to animals of contractors allowed in the command for some time but to any other animals which may enter the station under any conditions whatsoever. In order to fully comply with these regulations, veterinarians should request their commanding officers to issue such instructions as will exclude from the command any privately owned animal from any source unaccompanied by a certificate of freedom from glanders or other transmissible disease and signed by an Army veterinarian.

16. At the present time the ophthalmic is the only mallein test authorized except at some places where the intradermic test has been demonstrated, permission given for its use, and the necessary equipment supplied. The use of the intradermic test by any veterinarian at additional places is prohibited pending the receipt of instructions from this office.

17. Summary:

(*a*) Only competent officers to apply and read test.

(*b*) The same officer to apply and read the test on the same animal.

(*c*) No test to be made unless a clean corral or stable is available to receive the animals passing the test.

(*d*) No test to be made on animals without normal conjunctivæ or which present physical signs of glanders.

(*e*) All animals to be tied up during the application and reading of the test.

(*f*) Mallein to be instilled about nightfall.

(*g*) Readings to be made approximately at 12, 18, and 24 hours.

(*h*) Three readings on every animal.

(*i*) Suspicious reactors to be isolated and observed every hour.

(*j*) Immediate destruction and post-mortem examination of all positive reactors from any test.

(*k*) No holding for any re-test or report of blood test of any positive reactor.

(*l*) Suspicious reactors to be still further isolated until blood test is heard from and for re-testing.

(*m*) All animals of a lot in which are found positive reactors or suspicious reactors held for blood or re-test to be regarded as contacts and held for re-test.

(*n*) First test at an auxiliary remount depot to be in right eye and subsequent re-tests in alternate eyes.

(*Cir. Letter No. 28, Veterinary Division, Surgeon General's Office, October 6, 1918.*)

Dermatitis.

Dermatitis, or inflammation of the skin in the region of the fetlock, is classified under four subdivisions, depending upon the cause and extent of inflammation. The causes are mechanical, chemical, thermic, and infectious.

In reporting inflammatory conditions of the skin in the region of the fetlock, the following terms are to be used: (*a*) Dermatitis eczematosa, (*b*) dermatitis gangrenosa, and (*c*) dermatitis verrucosa.

The mildest form of dermatitis in this region is known as dermatitis erythematosa. In an animal with an unpigmented skin it would show merely as a redness. It occurs most often in well-bred animals with a thin, delicate skin. It may be caused by sunburn or slight irritation from stubble, sand, dirt, etc. This condition may lead to a more serious form of dermatitis if it is neglected. The cause should be removed if possible, and the fetlock kept clean and dry. If the inflammation does not subside in a few hours, the part should be covered with a mild ointment, such as cosmoline, lanoline, or oxide of zinc.

Dermatitis eczematosa.—Commonly called mud fever, scratches, or cracked heels. Horses with white fetlock are said to be most susceptible.

It usually begins in the fold of the fetlock. The skin is hot, tender to pressure, slightly swollen, and the animal shows a stiff gait when first required to move. The skin is covered with a moist, yellowish exudate, which dries after a few hours and forms a brownish crust. Cracks or fissures occur in the skin. Pus-producing organisms are admitted, and there is more or less pus discharged from this area. The skin and subcutaneous tissue become infiltrated with serum. The cracks may extend through both layers of the skin and even down to the tendon. Granulation tissue forms and fills the cracks, and appears as a ridge in or under the skin. The lameness soon disappears with exercise. The patient may be able to work and recover from this form of dermatitis in from one to two weeks if properly treated and kept clean.

Treatment.—The skin should be carefully washed with soap and warm water. The soap must be thoroughly rinsed off with clean warm water, and the part rubbed dry. If treatment is begun during the stage of moist eczema, a mild astringent should be applied. Burrows's lotion may be used. It is prepared by placing lead acetate, 6 drams, and sulphate of alum, 1 ounce, in water sufficient to make 1 pint. A good-sized portion of absorbent cotton should be saturated with this solution and applied to the fetlock under a bandage.

The dressing should be changed once a day for about two days.

If glycerin is available, about 4 ounces may be added to each pint of Burrows's lotion.

Petrolatum, to which has been added 2 per cent cresol, may then be applied once daily till the part is healed.

In case of granulation tissue, the application of Burrows's lotion may be followed by painting the part twice daily with tincture of iodine.

When treatment is not begun till the dry stage of eczema has appeared, better results are usually obtained by the use of a Priessnitz dressing with a one-half of 1 per cent solution of cresol. After about 12 hours the above dressing should be removed and the treatment as outlined above should be followed.

Dermatitis gangrenosa.—This is the most dangerous and obstinate form of an acute dermatitis in the region of the fetlock. It is known as necrotic dermatitis, frostbite, coronary sloughing, and necrobiosis, Heavy Artillery horses, especially those with a thick skin and coarse legs, are most susceptible.

The disease is most prevalent in winter in horses that are compelled to work or stand in filth. It was thought at one time that working on city streets where salt had been used to melt snow and ice was the most common cause. It is known now that the disease is due to a mixed infection. The necrosis bacillus is the principal cause. This organism is indigenous to certain localities, especially mud to which has been added urine, manure, etc. These organisms gain an entrance through skin which has been macerated by continued moisture, cracks, wounds from nails, pieces of wire, sharp clinches, calk wounds, etc. A neglected cause of dermatitis erythematosa, or eczematosa, may readily become infected and terminate in the gangrenous form.

Symptoms.—The disease occurs suddenly and symptoms increase rapidly. Lameness may be the first symptom observed. Upon closer observation, a diseased portion of skin about the size of a silver dollar may be found in the region of the fetlock. The skin for some distance around the diseased area will be found swollen and tender to pressure. Unpigmented areas might appear bluish or a bluish red at first. This is soon followed by an exudation of yellowish serum about the color and consistency of linseed oil. In from one to three days a line of demarkation appears around the border of the diseased area. The swelling may now reach from the hoof to the carpus or hock. The animal appears dull and depressed, is lame and often unable to bear weight on the diseased limb. Well-marked symptoms of fever are present. The dead island of skin is usually thrown off in from one to four days. It may be held in place much longer by strands of connective tissue, tendons, or ligaments. After the dead skin has been removed, a raw surface is exposed, which soon fills up with granulation tissue. In mild cases scar tissue forms and recovery may occur in about two weeks.

Such a favorable termination is seldom seen. The inflammation is more liable to penetrate to deeper tissues. It may reach the lateral cartilage, the sheath of the flexor tendon, the coronet bone, the coronary band, etc. The patient may make a partial or complete recovery even after certain complications have occurred.

A quitter often develops if the disease extends to the lateral cartilage. A ringbone may result if the coronet is affected. Septicemia is most liable to occur when the disease has extended to a tendon sheath, a joint, or to the coronary band. Subcoronary abscesses, with the loss of the entire hoof, are not unusual.

The prognosis should be guarded. Death often occurs even under the most advantageous conditions and with the most ideal forms of treatment. It depends greatly upon the extent and location of dead tissue and how soon proper treatment is begun after the disease appears. In well-marked cases of septicemia, tendovaginitis, or arthritis the prognosis is bad. With such complications the chances of recovery are seldom worth the effort and expense of treatment. The prognosis is decidedly bad when the horn begins to loosen around the coronary band. A rapid rise in temperature with increasing pain after removal of the dead portion of skin are considered dangerous symptoms.

Treatment.—Prevention is of the greatest importance. Animals that are compelled to work or stand in mud, slush, and filth should be carefully groomed twice daily. Especial attention should be given to the fetlocks and feet every day in order to detect any abdormal condition promptly.

Long hair along the lower extremities are nature's best prevention against disease in this region. The habit of clipping the fetlocks in the fall, winter, and spring is decidedly objectionable.

As mud and filth are the principal causes of this disease, every effort should be made to provide clean, dry standings for animals at rest at least. Corrals should be drained and wet places filled or fenced off. Dry standings should be provided under sheds, around watering troughs, feed racks, and all places where animals congregate for feed, water, or rest. They should not be permitted to stand in wet horse manure or decomposed vegetable matter. The danger of infection is greatly increased in winter, when a crust of ice has formed over the surface of wet places through which animals are required to pass.

Dead tissue should be removed or freely scarified to admit air. The part should be well washed with a mild antiseptic. A bichloride pack, 1 to 1,000, should be applied for 24 hours. Ordinarily, better results will be obtained from this time on by treating as an open wound. It can be kept well covered with an antiseptic dusting powder till healing occurs. Better results may be obtained by painting twice daily with iodine, carbolic acid, and camphor in the following proportions: Gum camphor and carbolic acid of each 3 ounces, and tincture of iodine sufficient to make 1 quart.

When the dead portion of skin has sloughed out before treatment is begun, the animal should be cast and the part carefully curetted to remove all diseased tissue. It should then be treated as above outlined.

If the disease has extended to the region of the coronary band and undermined it, the horn should be thinned to the thickness of a finger nail over the diseased area.

Unless clean, dry standings are provided, the mortality in this disease will be high, regardless of the line of treatment.

Dermatitis verrucosa.—Commonly called "grease." The disease is a chronic, progressive form of inflammation. There are grapelike protuberences over the diseased skin. Verrucosa means grapelike. It may follow a neglected form of dermatitis eczematosa. It begins in a small spot in the region of the fetlock and gradually increases until it may extend to the knee or hock in from one to all four legs. The hind legs, particularly in hairy-legged horses, are most often affected.

The skin and subcutis become much thickened with infiltrated serum and new connective tissue. The diseased leg has somewhat the appearance of one affected with elephantiasis. A large portion of the hair falls out, and the balance becomes coarse, standing at right angles to the skin. The epithelium over small areas loosens and is cast off, leaving shallow excoriations or ulcers. These areas form the basis of granulation tissue which later rises above the surrounding skin. As a rule, the condition causes neither lameness nor an elevated temperature.

Advanced or old standing cases are difficult to cure, and spontaneous recovery is rare.

The cause of the disease is not known. There is some reason to believe that it may be infectious. There is a suggestive similarity between dermatitis verrucosa and canker of the frog. The two diseases may exist together.

Treatment.—Crusts and scabs should be washed off and the leg well cleaned. The grapes or warts should be removed, preferably with a white hot iron. Ulcers should be seared with a ball firing iron. Various remedies have been used with good results. One part of chromic acid in 500 parts of water is recommended. This preparation should be painted over the affected skin. The area is then covered with dry oakum or absorbent cotton and bound on with a bandage. The bandage is left on for four or five days, then removed, and any moist areas should be again painted with the chromic acid solution. If chromic acid is not available, the part may be painted with a one-half of 1 per cent solution of bichloride of mercury in dilute alcohol. Creosote or lysol in alcohol is also recommended. Ointments are contraindicated in the moist stages.

(*Cir. Letter No. 29, Veterinary Division, Surgeon General's Office, October 7, 1918.*)

Glanders—The Intradermic Mallein Test.

I. DESCRIPTION.

1. The injection of mallein into the skin of the eyelid is the only method of injecting mallein authorized, and will be known as the intradermic mallein test. It has been approved as an official test for glanders in the United States Army. It is not new, as it has been in general use by our allies during the present war. It has been used exclusively in our service overseas. All veterinary officers should acquaint themselves fully with this test before embarking for foreign service.

II. SYRINGES, NEEDLES, AND MALLEIN.

1. A special syringe of the Luer type with glass barrel and colored glass piston and of either one-half or 1 c. c. capacity, graduated in tenths of a c. c., holding 5 or 10 doses, respectively, has been adopted for making the injection. The syringe is fitted with a slip needle of 25-gauge diameter and approximately one-quarter of an inch long. The syringe and needles are sterilized by boiling. The needles should be kept in absolute alcohol when not in use.

2. Needles should be immersed in alcohol after each injection. For this purpose a 2-ounce graduate, in which is placed a pledget of cotton and an ounce of alcohol, has been found convenient. The syringe is placed in the graduate with the needle attached and embedded in the cotton until required by the operator. Three syringes should be provided when many animals are to be tested. Each syringe, as soon as used, should be returned to the graduate as described above and a clean one used for the next injection. Should animals with communicable diseases be tested, the syringe and needle must be sterilized by boiling after using in each case. A basin of mild antiseptic solution (liquor cresolis comp., one-half of 1 per cent) and a clean dry towel should be available for washing and drying the hands.

3. The dose is one-tenth of 1 c. c. Ophthalmic mallein is not to be used for intradermic testing, nor intradermic mallein for ophthalmic testing. Considerable quantities of ophthalmic mallein on hand at any station will be turned back to the medical supply officer after the adoption of the intradermic test.

III. TESTING ANIMALS USING CHUTE.

1. When testing animals in a corral, a straight chute, holding 12 or more, permits of the most rapid and accurate work. The chute should not be over 28 inches in width, strongly built to prevent spreading at the top, with no overhead posts or braces. There should be no wide cracks on either side of the chute. Both sides should be 4½ to 5 feet in height. Entrance and exit gates or bars with intermediate bars for every animal are needed, and the "runboard" on which the operator stands should be 2½ to 3 feet wide and not over 12 or 14 inches from the ground. The holding pen at the entrance to the chute should be long and narrow to prevent the animals running in a circle or milling at the time they enter the chute. This pen should not hold more than 50 animals.

2. Animals should pass into the chute from right to left. Bars are put in place behind every second or third animal and behind and in front of each one that is refractory.

3. On a chute holding 12 animals one veterinary officer with three good assistants can work to the best advantage. Two assistants should hold the animals and the other should carry the mallein, fill syringes, etc. Plenty of extra men must be provided to fill the corrals promptly, handle the bars, etc.

4. The assistants should draw the animal's head well over the top rail of the chute. He can pass the left arm over the animal's nose and seize the lower jaw, or he may place the left hand on its nose. At the same time he holds the ear with the other hand and pinches it so as to distract the attention of the animals while the injection is made. Some must be restrained by a twitch. It may be necessary to place a vicious animal in stocks.

5. The injection is made by a veterinary officer into the dermis of the lower lid of the eye about one-quarter of an inch from the margin and midway between the inner and outer canthus and parallel with the lid. The syringe, filled and fitted with a sharp needle, is held firmly in the right hand, between the thumb and tips of the middle fingers, allowing the index finger to be free to operate the plunger.

6. With the left hand encircle the right eye with the thumb and fingers, drawing down tightly the skin of the lower lid with the thumb, allowing the fingers of the hand to be free other than to act as a covering for the eye. With the syringe in the right hand, the back of which is resting against

the head of the animal in order to follow any movement, the needle may be introduced into the skin from before backward and parallel with the margin of the lower lid. The free index finger of the right hand is then placed on the end of the plunger and one-tenth of 1 c. c. is injected. As the mallein is injected, a small elongated swelling within the skin is seen, which insures that the injection has been made into the dermis and not subdermally. The injection may be made in either eye. The relative position of the operator, assistant, and animal are the same. If the injection is to be made in the left eye the right hand of the operator is passed under the left arm of the assistant and the needle inserted toward the median line at the same point indicated above.

IV. TESTING ANIMALS USING HALTER.

1. In testing animals on the halter, one veterinary officer and six assistants can work to the best advantage. The work can be done as expeditiously with quiet animals on a halter as when passed through the chute.

2. The animal should be placed facing good light on ground lower than the operator. It may be stood in the gutter. The assistant should place a twitch on the animal and hold him securely from the near side. With six assistants, one man can keep a record of the animals, carry the mallein and fill the syringe. The other five men should get animals in position and return them to the stable after the injection. Ordinarily, more than one assistant for holding each animal is unnecessary and in the way of the operator.

V. REACTIONS.

1. A small "puffy" nonsensitive swelling is seen in practically all animals in from two or three hours after injection, and it remains in a few cases for 24 hours, more rarely for 48 hours. This swelling should not be confused with the typical swelling of a positive reaction.

2. A positive reaction will be indicated at 40 to 48 hours by a marked swelling and edematous infiltration of the skin and underlying tissues, both lids usually being involved and nearly or completely closing the eye. On some animals the edema will be observed to have extended downward along the side of the face. The swellings are usually hot, hypersensitive, and "pit" readily on pressure. In some cases the hypersensitiveness may not be especially noticeable. Some reactors will show, in addition, the classical ophthalmic reaction with lachrymation, profuse, purulent conjunctivitis, photophobia, depression, etc. While positive and negative intradermic reactions will usually be distinct and can be conclusively determined without question, a small percentage may show at the time of reading a slight swelling with edema of the lid which are doubtful and should be re-tested in the other eye immediately and checked by means of the serum test, as has been customary in doubtful reactions to the ophthalmic test.

3. Some infected animals will show a decided reaction at the tenth or twelfth hour, which will increase until it reaches its maximum at the thirty-sixth or forty-eighth hour. Other reactions appear slowly. All typical swellings on positive cases will remain for from three to four days, disappearing gradually until the eye presents its normal appearance.

VI. READING THE TEST.

1. The test will be read for all the animals within a period of from 40 to 48 hours after injection. All animals showing no reaction at this reading should be considered glanders free. All doubtful cases must be removed at this time and carefully observed and examined at least three times for the next 24 hours. The procedure regarding the disposition of positive reactors, re-testing and blood tests in suspicious cases, and the handling of aimals which have been in contact with positive or suspicious reactors are fully laid down in paragraphs 11, 12, and 13, Circular Letter No. 28, and apply equally, whether the test used is the intrademic or the ophthalmic.

2. The veterinary officer should be on a chute as animals pass through for observation. He should stand on the runboard facing the animal. In this manner eyes are easily observed and compared. Doubtful cases should be stopped in the chute for more careful inspection, and if a suspicious or positive reaction is apparent, the animal must be placed in isolation promptly.

3. No test for glanders is infallible. For this reason a careful physical examination must be made of each animal. It is best to make this examination at the time of reading this test. Particular attention should be given to a discharge from the nose or abscesses wherever located. The intermaxillary glands of every animal should be palpated. If there is a discharge from the nose, a careful inspection should be made of each nostril. All cicatrices or ulcers in this region should be carefully inspected. An animal with any positive symptom of glanders should be promptly

destroyed, regardless of what or how many tests it may have passed successfully. It will not be held for further mallein testing of any nature. Those with suspicious physical symptoms should be isolated at once and every effort made to determine the presence or absence of glanders.

VII. GENERAL INSTRUCTIONS.

1. The intradermic test will not be used at time of purchase for the reason that three days are required to complete the reading. All newly purchased animals will be given the ophthalmic test at the time of purchase and submitted to either the ophthalmic or intradermic mallein test as soon as practicable after arrival at an auxiliary remount depot, and must pass a satisfactory test at the depot before being released from quarantine and permitted to come in contact with other animals.

2. It is contemplated to replace the ophthalmic with the intradermic test at other than purchasing places, and this as soon as the syringes and mallein are available and veterinary officers have been properly instructed in the necessary technique under the supervision of a general veterinary inspector. Veterinary officers will continue to use the ophthalmic test until these facilities are available and until such instruction has been received and officers are fully competent.

3. The intradermic test will not be used as a check on the ophthalmic, nor vice versa. A test will be completed with the method by which it was begun.

4. All parts of Circular Letter No. 28 not already mentioned herein which refer to mallein tests in general, and are not clearly limited in their application to the ophthalmic test or are not rescinded by contradictory instruction in the present letter, will be interpreted as referring equally to the intradermic. Syringes, mallein, etc., will be obtained by usual requisition on the proper medical supply office. All mallein tests reported on Form 102 or any other report will be designated ophthalmic or intradermic, as the case may be.

5. This office is again forced to draw the attention of all depot and unit veterinarians to the importance of the task before them in the eradication of glanders. This is by all means the most serious problem which confronts the Veterinary Corps to-day. The results thus far obtained are not satisfactory and the importance of constant and unremitting attention in the application of every detail of the various instructions on the subject of glanders is again emphasized.

6. No animals should be allowed to remain untested for a long period. It is no excuse for not testing to state that there was no reason for suspecting infection. The veterinarian is wholly responsible for advising when tests should be made and no veterinarian is justified in regarding his station free from glanders unless he can prove such to be the case by records of frequently repeated tests. The presence of the disease will always be suspected in the absence of evidence to the contrary.

7. Every assistance in this work has been promised by the remount division and will be afforded by this office, and failure to discover cases promptly by means of frequent tests will be considered a direct reflection on the efficiency of the responsible veterinarian.

(*Cir. Letter No. 30, Veterinary Division, Surgeon General's Office, October 23, 1918.*)

Instructions and Information for Veterinary Corps.

I. WEEKLY RETURN, FORM NO. 102.

1. The remount section of the return on Form No. 102 rendered by the veterinarian of an auxiliary remount depot was adopted in order to show the incidence of disease in the depot proper as distinguished from the remainder of the camp. It is manifestly incorrect, therefore, to include in the remount return cases which originate in the camp. The fact that a sick animal from the camp goes to the depot, is exchanged for a sound one, and finds its way to the hospital through the depot must not mislead the veterinarian into charging the case against the sick rate of the depot. If existing regulations, paragraphs 57, 23, 26, S. R. No. 70, C. No. 1, are followed, a transfer card, Form No. 116, will accompany each animal and is in itself evidence that the animal came from the camp. In collecting animal statistics it is desired to compare the rates of organizations in camp with the depot rates and the two should, therefore, be kept entirely distinct.

2. It is apparent in this office that this purpose is being frustrated since on a majority of the returns received the number of animals taken up on the hospital return is identical with the number taken up and dropped on the remount return. Actually these figures will be identical only when no sick from the camp are received into the hospital. In all other cases the number of admissions to hospital as shown on the hospital return should exceed the number admitted to sick report

on the depot return and dropped therefrom, and for each animal going to make up this excess a transfer card should be on file.

3. All veterinarians of auxiliary remount depots will investigate this matter and correct the error where it exists in order that the return may be rendered in a uniform manner and may be of practical statistical value. Division veterinarians and the veterinarians of mobile organizations in camps should also note the instructions in paragraph 26, S. R. No. 70, C. No. 1, regarding preparation of Form No. 115 for every case admitted to sick report. A copy marked "Transfer card" must accompany the animal when sent to the hospital at the depot, whether direct or by means of the mobile veterinary section. In the latter case the officer in charge of the section is responsible that the transfer card is properly prepared and goes to the veterinarian of the auxiliary remount depot.

4. A weekly return on Form No. 102 should be forwarded even when there are no animals on sick report. The information relative to effective animals, lines 14–17, is required.

5. Explanatory statements should always be made under remarks whenever there are changes, such as turning in all animals of an organization or its transfer elsewhere, discontinuance of a station, or other conditions which may affect in any way the routine information desired or interfere with the prompt and regular sequence of these returns.

II. CAMP VETERINARY SERVICE.

1. Letter from this office dated August 2, 1918, addressed to camp veterinarians and paragraphs 2 and 3, Section IV, Circular Letter No. 27, are rescinded.

2. The general definition of the camp veterinary service is found in paragraph 13½, S. R. No. 70, C. No. 1.

3. Under the date of August 17, 1918, a permanent personnel for the camp headquarters of certain camps, in accordance with Tables of Organization No. 411, was authorized. The foregoing table as corrected to September 3, 1918, allows the following veterinary personnel:

One captain or lieutenant, camp veterinarian.
One lieutenant, assistant to camp veterinarian.
One lieutenant, assistant to camp veterinarian and meat inspector.
One sergeant first class.
One sergeant, assistant to meat inspector.
One corporal, assistant to meat inspector.
Two farriers or privates first class.
One private.

4. This camp veterinary detachment is permanent and is contemplated to be made up of men fit for limited service only. The sergeant and corporal assigned as assistants in the meat-inspection work are required to have had Bureau of Animal Industry experience and are assigned by War Department orders after a course of training in the meat inspection service at Chicago. If men have been assigned to meat-inspection duties by other than War Department orders, their names and serial numbers should be promptly reported to this office with a statement of their prior service, in order that arrangements may be made to provide them with this training. Owing to the scarcity of men with proper meat-inspection experience and the comparatively limited needs for such in a division, the transfer of these men to divisions is undesirable.

5. The object in assigning a permanent camp staff was to relieve the division personnel of duties in connection with camp utilities so that all the available time can be devoted to training. Unless otherwise directed by superior authority, the jurisdiction of the division veterinarian should not extend beyond the divisional veterinary service, while the camp veterinarian is responsible for the camp veterinary service outside the division.

6. *Reports.*—As specified in paragraph 13½, S. R. No. 70, C. No. 1, the reports of the camp veterinarian are the same as those of the division veterinarian. When both officers serve in the same camp each should prepare separate reports. Paragraphs 19 and 13½, S. R. No. 70, C. No. 1, should be interpreted as calling for Form No. 102 from the division veterinarian on the divisional animals only and one from the camp veterinarian on all others outside the auxiliary remount depot. Only one weekly telegraphic report will be sent from a camp outside the auxiliary remount depot and this will be made by the camp veterinarian after obtaining from the division veterinarian the necessary data on the divisional animals. A separate report on Forms No. 111 and 47a, M. D., is desired from every veterinary detachment; that is to say, one from the division for all

personnel of the division present with it, one from the camp, one from the auxiliary remount depot, and one from any separate mounted organization which has veterinary personnel regularly assigned, as, for example, a regiment of horsed Field Artillery or a wagon company. The return from such detached command at a camp is forwarded through the camp veterinarian, and should the organization belong to a division at another camp, the report will be forwarded to this office through the veterinarian of the division to which it is assigned. The sample Form No. 47a and remarks which have been distributed explain this form in detail.

7. The veterinary personnel originally authorized for a depot brigade in Tables of Organization No. 400 has been eliminated from this table as corrected to August 15. It is contemplated that the camp veterinary service will include the depot brigade. Enlisted men of the Veterinary Corps who may still be attached to a depot brigade should be absorbed into the camp detachment if practicable, otherwise reported to the Surgeon General for assignment.

8. In Tables of Organization No. 425, office of a camp quartermaster, two veterinary officers were originally allowed, but these were eliminated from the table as corrected July 16, 1918. The inspection of meats and the care of the animals pertaining to the office of the camp quartermaster constitute a part of the duties of the camp veterinarian.

III. VETERINARY SERVICE IN COMMANDS UNDER DEPARTMENT COMMANDERS.

1. An error has been pointed out in the first sentence of paragraph 2, Section V, Circular Letter No. 27, which destroys the meaning intended to be conveyed. The following should be substituted for the first sentence of this paragraph.

2. "The veterinarian of a command under the jurisdiction of a department commander will forward through the department surgeon all communications and reports which would be sent direct to this office in case the command were not under the control of the department commander. (See sec. 6, G. O. 23, 1918.)"

IV. ENLISTMENTS, TRANSFERS, PROMOTIONS.

1. Paragraph 41, M. M. D., C. No. 3, September 29, 1917, is applicable to the Veterinary Corps in that when a man is enlisted for, reenlisted in, or transferred to the Veterinary Corps, the veterinary officer who first receives him will prepare and forward a record card (Form No. 627, A. G. O.) of the soldier direct to the Surgeon General, except in the case of a man stationed in the Philippines, Hawaii, and the Panama Canal Department, when the record card will be sent through the department surgeon.

2. Veterinary officers in forwarding requests for transfer of enlisted men of their commands will indorse on the application the following data:

(*a*) Recommendation.
(*b*) Soldier's full name and number.
(*c*) Correctness of soldier's statements.
(*d*) Character of soldier.
(*e*) Qualifications and amount of training as a veterinary soldier.
(*f*) Soldier is or is not indebted to the United States.
(*g*) Physical condition, fitness for overseas duty.
(*h*) Soldier has sufficient funds to defray expenses of transfer.
(*i*) Record of courts-martial.
(*j*) Strength of organization.

3. In order to insure a uniform method of recommending men for promotion, the following form is to be used:

OFFICE OF THE VETERINARIAN, A. R. D., No. 301,
Camp Devens, Mass., November 1, 1918.

From: The veterinarian.
To: The Surgeon General.
Subject: Enlisted men recommended for promotion.

1. The following man* men* of this detachment is* are* recommended for promotion to the grade* grades* specified (*use words which apply):
(1) Sergt. John L. Brown, No. 2787, to grade of sergeant first class.
(2) Corpl. Fred N. Smith, No. 6582, to grade of sergeant.
(3) Farrier Thomas J. Jones, No. 3661, to grade of corporal.

2. Strength of the detachment this date:

	By grades.	Authorized.
Sergeant first class	--	1
Sergeant	--	3
Corporal	3	4
Farriers	10	12
Horseshoer	1	1
Saddler	1	1
Cook	1	1
Privates first class	16	17
Privates	37	35
Total	69	75

4. Camp veterinarians have not been given the authority of division veterinarians to sign warrants "for the Surgeon General."

V. CIRCULAR LETTER NO. 12, SICK RATES.

1. This letter reads as follows:

> Subject: Weekly statistical report.
>
> 1. Statistics compiled in this office from weekly telegraphic reports rendered by veterinarians show:
>
> (*a*) An undue proportion of deaths to sick under treatment.
> (*b*) An impossibly low sick rate from minor injuries and disease of a noncontagious type.
> (*c*) A lower sick rate from contagious disease than the low death rate supports.
>
> 2. These statistics indicate that veterinarians are only showing in their returns serious cases of illness and injury.
>
> 3. In future all animals unfit for duty from veterinary causes will be included in the returns rendered by veterinarians.

2. This will not be further published as a circular letter.

3. The matter therein is in no sense obsolete to the extent that responsible veterinarians are expected to place on sick report all animals which are sick. This is fully covered in the second and third sentences of paragraph 57, S. R. No. 70, C. No. 1. An animal at an auxiliary remount depot unfit for issue by reason of physical disability should be considered incapacitated for full duty and therefore should be on sick report unless it has been inspected and condemned and requires no treatment. The desire to maintain a low sick rate is no excuse for ignoring this rule. It is not necessary to state that every effort will be made to keep the sick rate at the lowest possible figure consistent with an efficient veterinary service, but a sick return which is not a frank statement of actual morbidity conditions or which includes only the serious cases is both unreliable and mischievous. High sick rates, on the other hand, are subject to criticism, but such criticism is constructive and is always directed toward the results of the efforts of the veterinarian to eliminate the causes of preventable disease or injury and never against his activities in discovering all such cases and making them of record.

4. It has been noted that, coincident with the shipment of a lot of animals from an auxiliary remount depot, marked increase in the absolute number of sick is reported. A relative increase is readily understood, but an absolute increase, particularly of noncommunicable diseases, suggests but one thing, i. e., that in selecting animals for a shipment, cases of disease and injury have been discovered which otherwise would have been overlooked. In other words, the corrals contained sick animals undetected by the veterinarian, who was submitting an inaccurate weekly sick return based on a partial knowledge only of conditions in his depot, with which he is assumed to be fully conversant. The corrals must be searched regularly and systematically for sick animals. The detection of the sick is considered a function of the veterinary service and should be done under the supervision of the veterinarian of a command. If his personnel is inadequate, he should report the facts to the commanding officer and request additional assistance. This work can be done most efficiently, as a rule, by passing the animals through a chute in order that each individual may be observed and should be so arranged that, except under unusual circumstances, all the animals receive daily examination. The "riding" of corrals as ordinarily conducted is not approved as an efficient method of weeding out the unfit.

5. Normally the sick rate of a station should present a regular curve representing the equable movement of the animals through the hospital or sick line. Sudden increase in the number remaining on sick report should always be viewed by the veterinarian with suspicion as is done in this office. Excessive variations must be avoided, and conditions beyond the control of the veteri-

narian which cause them are the exception rather than the rule. These variations are frequently due to failure to send animals to duty which have recovered. Such animals are often allowed to accumulate for many days or weeks. The hospital is no place for sound animals and the veterinarian at his daily inspection should be careful to see that cases are being returned to duty regularly and without unnecessary delay. A sick report padded by an accumulation of cases which have fully recovered is as unsatisfactory as one which is incomplete by reason of not showing all animals actually sick.

VI. CIRCULAR LETTER NO. 16.

1. Paragraph 3 of this letter is obsolete and is amended to read as follows:

> Requisitions for veterinary supplies in the field must receive the approval of the senior medical officer of a command before being referred to the medical supply officer for issue. For a division, the approving officer will be the division surgeon, and for a camp and detached organizations thereat, including the auxiliary remount depot, the camp surgeon. The division veterinarian will act only on division requisitions before transmitting them to the division surgeon; the camp veterinarian will likewise act on camp veterinary requisitions before the camp surgeon receives them, with the exception of those from an auxiliary remount depot. The veterinarian of an auxiliary remount depot will submit his requisitions direct to the camp surgeon. (See par. 21, Circular Letter No. 17, which is hereby modified in this respect.) Requisitions from commands under a department commander are sent by the veterinarian direct to the department surgeon after receiving the approval of the camp or post surgeon. The copy of the requisition which is forwarded to the Surgeon General for file (pars. 22 and 46, S. R. No. 70, Changes No. 1) should be plainly marked "File copy for the Surgeon General."

VII. UNIT VETERINARIANS.

1. While the veterinary field unit, consisting of one officer, two farriers, and one private, was adopted as a convenient unit in measuring men and supplies, it does not ordinarily constitute an administrative unit in the military acceptance of the term. The veterinary personnel attached to a command forms the veterinary detachment thereof and may or may not include the personnel of one or more veterinary field units. The veterinary detachment attached to a wagon company, or a brigade of infantry, consists of one veterinary field unit; that attached to a regiment of cavalry, of two veterinary field units; and that pertaining to a camp consists of individuals without reference to veterinary field units. All these detachments are commanded by the senior veterinary officer present, who is the wagon company veterinarian, brigade veterinarian, regimental veterinarian, or camp veterinarian, as the case may be. His duties as detachment commander are fully covered in S. R. No. 70, paragraph 30, C. No. 1.

2. In connection with certain regiments of Cavalry and Field Artillery, there appears to prevail the erroneous impression that since the detachment consists of two veterinary field units there must be two unit veterinarians who are unit commanders. The junior veterinary officer in such cases should be regarded as simply a member of the veterinary detachment and the commissioned assistant to the veterinarian. The expression "unit veterinarian" consequently would be understood to identify the veterinarian of a mounted command, using the term veterinarian as meaning the senior veterinary officer attached to that command. For all administrative purposes he is the veterinarian of the unit (command) to which he is attached rather than the veterinarian of a veterinary field unit.

VIII. COMMUNICABLE DISEASES.

1. The following list of pathological conditions includes practically all the communicable diseases which are liable to be encountered. Rare diseases not in this list which may be observed and which are regarded as communicable will be placed in class *c*. Common conditions, such as pediculosis and ringworm, while undoubtedly communicable, are seldom cause for admission to sick report and are intentionally omitted. The extensive prevalence of pediculosis or similar conditions in a command should be reported under the general requirements of class *d* and demand active measures for their eradication:

a *d* Abortion, infectious.
a *c* Actinomycosis.
a *c* African horse sickness.
a *d* Anemia, infectious (swamp fever).
a *b* *d* Anthrax (malignant pustule).
a *c* Aspergillosis.
a *c* Borna's disease (infectious meningo-encephalitis).

	a	*c*	Coital exanthema.
	a	*d*	Dermatitis contagiosa pustulosa (Canadian horsepox, contagious acne).
	a	*d*	Dermatitis gangrenosa (necrotic dermatitis, necrophorus infection).
a	*d*	*c*	Dourine.
	a	*c*	Erysipelas.
a	*b*	*d*	Forage poisoning.
a	*b*	*d*	Glanders.
	a	*d*	Influenza.
	a	*d*	Lymphangitis, epizootic.
	a	*c*	Lymphangitis, ulcerative.
	a	*c*	Mal de caderas.
	a	*c*	Malignant edema.
a	*b*	*d*	Mange (scabies), all varieties.
	a	*c*	Nagana.
	a	*c*	Omphalo-phlebitis (navel evil).
	a	*c*	Piroplasmosis (equine malaria).
	a	*d*	Pneumonia, infectious (contagious pleuropneumonia).
	b	*c*	Poisoning.
a	*b*	*c*	Rabies.
	a	*d*	Stomatitis, infectious, pustular.
	a	*d*	Stomatitis, vesicular (foot-and-mouth disease).
	a	*d*	Strangles.
	a	*b*	Surra.
	a	*c*	Tetanus.
	a	*c*	Tuberculosis.
		d	Undiagnosed suspected mange or glanders.
	a	*c*	Variola, equine.

a. To be included under the heading of communicable disease in the weekly telegraphic statistical report.

b. The first case discovered in a command to be reported direct to the Surgeon General by telegram, as provided in Special Regulations No. 70, C. No. 1, paragraph 54, last section, for glanders. Report to the department surgeon when the case is outside the continental limits of the United States.

c. To be reported on weekly by the veterinarian of a command from the discovery of the first case until the disposal of the last one or whenever isolated cases are encountered. The first report will discuss the origin of the disease and outline the steps taken to prevent its further extension, while subsequent reports will describe its course, treatment, complications, outcome, etc. These reports, when limited to strictly professional matters, should pass through veterinary channels. If they involve other than professional matters or questions of sanitation and administration, they should pass through military channels.

d. These are the common communicable diseases regarded as sufficiently important to require the adoption of active measures of isolation, quarantine, cleanliness, and disinfection. These measures as regards glanders are described in detail in Special Regulations No. 70, C. No. 1, paragraph 55. These diseases are important because of the facility with which they may be transmitted to sound animals and cause widespread disability and losses, and it is one of the most urgent duties of the veterinarian to make suitable and prompt recommendations to prevent extension of infection by controling the patient and destroying the contagion. A weekly report for each one of these diseases, meeting the requirements, so far as practicable, of the report required for glanders in the last section of paragraph 55, will be forwarded through military channels by the veterinarian of the command in which the case occurs.

Attention is especially directed to the fact that the reports called for under *b*, *c*, and *d* above are not confined to the veterinarian of an auxiliary remount depot, but they are to be made by the veterinarian of every depot, division, camp, post, or other station in which such cases may occur.

IX. SPECIAL REPORTS AND ARTICLES FOR PUBLICATION.

1. The attention of all veterinary officers is directed to paragraphs 421, 422, and 423, M. M. D. The provisions of these paragraphs are equally applicable to veterinary as to medical officers and refer equally to veterinary as to medical or surgical clinical reports and papers. The clinical

report referred to in paragraph 421 is, for veterinary cases, the record on Form No. 115 with any additional data available.

2. The paragraphs referred to read as follows:

421. When a medical or surgical case presents unusual or interesting features, a special report of the same will be forwarded by the attending surgeon, through medical channels, to the Surgeon General. Copies of the clinical record (pars. 407 to 411) should be forwarded therewith.

422. Special reports are invited on other medical, surgical, and sanitary subjects which appear to merit their preparation. When they involve only professional interests, they should be forwarded, through medical channels, to the Surgeon General.

423. Medical officers will not publish professional papers requiring references to official records or to experience gained in the discharge of their official duties without the previous authority of the Surgeon General.

3. The making of clinical reports by veterinary officers on cases which are of unusual interest or importance in veterinary practice and to the live-stock industry is encouraged. Practically no such reports are being received now, and it is felt that much good material is being lost. If Form No. 115 is kept in careful manner from day to day, the compiling of a special report on a case should become a very simple matter. If the report was written for publication, it will be examined and returned to the writer with authority to publish, provided it contains no objectionable matter.

X. THE INTRADERMIC MALLEIN TEST.

1. When the result of an intradermic test is suspicious and it is decided to make a serological test, care must be taken that the sample of blood is drawn without delay and not to exceed 72 hours after the mallein was injected. This is to avoid the possibility of the intradermic injection interfering with the accuracy of the complement fixation test.

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(*Cir. Letter No. 31, Veterinary Division, Surgeon General's Office, November 18, 1918.*)

Glanders Autopsies.

1. In conducting an autopsy on animals suspected of glanders, one should use extreme care before, during, and after the operation to avoid infection. The operator should be provided with a rubber coat or apron, rubber boots, rubber gloves, and an abundant supply of some well-recognized antiseptic solution. Infection may take place through wounds or abrasions of the skin or healthy mucous membranes. The hands of the operator, unless wholly protected by gloves, should be washed in the antiseptic solution from time to time during the autopsy and carefully after it is finished. In case of an injury from an instrument, spicule of bone, etc., the wound should be immediately and carefully cleaned with a strong disinfectant and medical attention sought promptly.

2. It is not anticipated that autopsies will be conducted on animals showing positive physical symptoms or lesions of glanders ante mortem. Neither is it necessary that the autopsy be carried beyond the point of locating positive lesions of this disease.

3. Glanders lesions may be located in the skin and subcutaneous connective tissue, lymph vessels and glands, organs of locomotion, respiratory tract, digestive apparatus, genito-urinary organs, and circulatory and nervous system.

4. Characteristic lesions in a majority of cases are found in the respiratory tract. Some of the best authorities claim to have never made an autopsy on a case of glanders in which lesions were not found in some part of the respiratory tract. Therefore this tract should be examined immediately following the examination of the skin. Examination should begin with the nasal septum.

SKIN AND SUBCUTANEOUS CONNECTIVE TISSUE.

1. In the skin the lesions may be nodules, abscesses, or ulcers. Nodules, if present, are grayish in color and may be isolated or confluent. They vary in size from that of a mustard seed to that of a small pea. Degeneration occurs and they are soon transformed into ulcers.

2. In most cases abscesses of the skin are located in the deeper portions of the derm. This condition is spoken of as button farcy. When incised in the formative period, a yellowish caseous area may be observed, which is friable and surrounded by a yellowish zone which is continued to the periphery by a congested, inflamed hemorrhagic area. The skin is eaten away little by little. Soon the nodule softens, opens, and a yellowish, oily pus escapes. At times glanders nodules neither soften nor ulcerate but remain hard and fibrous with or without caseation.

3. In the subcutaneous connective tissue one may recognize nodular or diffuse inflammation. The nodule may vary in size from that of a small pea to that of a shell bark. They may extend to the surface and produce ulceration. Diffuse inflammations are characterized at first by congestion and infiltration. Numerous round cells accumulate in the perivascular tissue and in the lymph spaces. A yellowish viscous exudate occurs as a result and permeates the connective tissue, lymph vessels, ganglia, and muscular interstices. The engorgement gradually becomes chronic. As a result the connective tissue is dense and the skin thick and hard. In various portions of the enlargement softening occurs and abscess formation is followed by ulceration.

LYMPH VESSELS AND LYMPH GLANDS.

1. Lymph vessels in the region of a glanders lesion and the glands to which they lead show more or less interesting changes. The vessels are inflamed, the walls thickened, and their lumen closed by thick, yellowish, coagulated lymph, which adheres to the walls. The perivascular tissue is infiltrated with a yellowish, sometimes gelatinous, exudate, which eventually becomes dense and fibrous. Nodules form on the distended lymph vessels. When they reach the surface they soon soften, rupture, and produce ulcers.

2. At first the gland is hypertrophied, congested, and infiltrated with lymph. Soon after this period areas of yellowish or grayish caseation, surrounded by fibrous tissue, form and are followed by necrosis and degeneration. Sometimes the altered gland is entirely fibrous. More often, however, it is mammillated, bosselated, and presents sclerotic tissue with several caseous areas. Softening and ulceration are exceptionally produced.

ORGANS OF LOCOMOTION.

1. Muscles are rarely affected with glanders lesions. In some cases, however, one may find in the interstices hemorrhagic, infiltrated areas, yellowish gray or reddish nodules, and some caseous or purulent foci.

2. Serous membranes of articulations, tendons, and tendon sheaths may show congestion or inflammation with an exudate. Bones are sometimes, yet rarely, affected. Caries as a result of glanders has been recognized.

RESPIRATORY APPARATUS.

1. Characteristic lesions are usually found in the respiratory tract. They appear in the form of nodules or ulcers on the pituitary membranes, mucous membranes of the sinuses, larynx, trachea, bronchi, the lungs, and pleura.

2. They occur most frequently on the median nasal septum. Nodules are formed in the deeper portions of the mucosa and become caseous, soften, break, and form the characteristic ulcers. In rare cases the ulcer heals, leaving a star-shaped cicatrix. The ulcers are more or less numerous and extensive, depending upon the progress of the disease. Ulcers may penetrate cartilage and produce caries. Mucous plaques may occur and become edematous, yellowish, soft, and indurated or necrotic.

3. The sinuses become more or less altered and contain a viscous, yellowish, or grayish purulent material. Nodules and ulcers may be present. The mucous lining of the sinuses may be reddish, thick, roughened, catarrhally inflamed, and hypertrophied without ulceration. They contain a more or less abundant collection of mucopurulent material.

4. The laryngeal mucosa may present lesions similar to those occurring on the pituitary membranes and contain nodules or ulcers more or less deeply located. Similar changes have been observed in the guttural pouches. It is not rare to find glanders lesions on the mucosa of the trachea. In most cases such lesions are found on its anterior surface. The lesion may penetrate to the cartilaginous rings. Ulcers in this region may heal and produce the characteristic glanders cicatrix. Similar changes may be presented in the branches of the trachea. On the respiratory mucosa, as on the skin, the inflammation extends beyond the nodule or ulcer. The mucous glands are stimulated and a varying amount of mucus is secreted.

5. Lesions in the lung are presented in the form of nodules or pneumonic areas with alterations of the interlobular tissue, blood, and lymph vessels and bronchi. Nodules of small volume, often miliary in size and from that to the size of a pea, may be detected by palpation. The number and size vary with the age of the lesions. Usually they are most abundant in the portion of lung nearest the pleura. They begin by a reddish ecchymotic spot, which is soon transformed into

a small, round, homogeneous, yellowish, grayish, or semitransparent mass, fleshy in consistency, and easily crushed. The mass is formed of leucocytes and surrounded by a moist area. Later the central portion becomes whitish, grayish, yellowish, or opaque from the death of cells and cheesy degeneration. The central mass increases gradually in size. The periphery becomes thin, dense, and fibrous. If located near the surface of the lung, the pleura is elevated. When the nodule is incised a caseous yellowish or grayish central portion may be observed, which is easily detached by scraping with a knife. The fibrous peripheral zone is easily observed. Certain nodules may be entirely fibrous while others will show calcareous infiltration.

6. Upon autopsy, certain horses present in the lungs a variable number of miliary translucent nodules. In some cases no other lesions can be found. The translucent aspect is the characteristic first stage of a glanders lesion. It may be difficult to demonstrate the presence of glanders bacilli in such nodules even when obtained from the lungs of a clinical case of glanders. However, Nocard has demonstrated the fact of their glanders origin.

7. The seat of lobular glanders pneumonia may be in the deeper portion of the lung or on its surface. The extent of the lesion depends upon the age of the disease. The lesion is yellowish or yellowish gray in color, which may or may not be surrounded by a zone of congestion, irregular in contour, of uniform aspect, and coagulated or granular on the cut section. The pleura, if attacked, and in all cases the interlobular tissue and the walls of the alveoli, are thickened, edematous, and infiltrated. The alveoli are filled with a fibrinous exudate which is undergoing degeneration. Caseous areas are soon formed in most cases. Occasionally the inflamed mass is transformed into sclerotic tissue. In certain cases the diseased lobule becomes gangrenous or purulent. The mass may be evacuated into a bronchus, after which there may exist a cavern surrounded by fibrous tissue.

8. In the region of a glanders lesion in the lung and always in the interlobular, perivascular, and peribronchial tissue, lymphatic alterations may be observed, such as edema and infiltration. It may constitute a round, nodular, clear, translucent, or opaque mass. In certain parts of the lung, as the inferior border of the anterior lobe or in the superficial area, the alteration of the lymphatics ends in thickening and subpleural connective tissue; the interlobular, perivascular, and peribronchial tissues are consolidated. Certain vessels and bronchi of the diseased area are inflamed and altered or occluded. One can recognize on the pleura areas of pleurisy.

DIGESTIVE APPARATUS.

1. The pharyngeal mucosa at times shows lesions similar to those found in the anterior respiratory tract. In exceptional cases such lesions are found in the intestines. Nodules more or less numerous are sometimes found in the liver. They may or may not be accompanied by perilobular cirrhosis. The spleen is more often affected and shows changes similar to those located in the lung.

GENITOURINARY APPARATUS.

1. In the stallion there is often inflammation and infiltration in the sheath and scrotum. The inflammation can be either uniform or punctated. There is a serous exudate in the scrotum. The testicle is hypertrophied, inflamed, and more or less nodular. An abscess may form in the epididymis. There is inflammation and infiltration of the testicular cord. The lymphatics in this region are inflamed. There is at times congestion and thickening of the mucous lining of the seminal vesicles. The follicles are more or less hypertrophied.

2. In the mare the mammæ are often engorged and inflamed. The mucous lining of the uterus and vagina may show lesions similar to those seen on the nasal mucous membranes. Glanders nodules are rarely found in the kidney.

CIRCULATORY APPARATUS AND NERVOUS SYSTEM.

1. Small grayish areas sometimes are found on the ventricular endocardium. A glanders nodule has been found in the choroid plexus.

RECORDS AND REPORTS.

1. Careful and accurate autopsies are required. The main object of an autopsy is to establish or confirm a diagnosis, and one will be made on all animals lacking clinical signs of glanders which are destroyed on a positive mallein test. Autopsies should likewise be resorted to freely in case of any other pathological condition in which the diagnosis is in doubt.

2. In glanders autopsies a careful search should be made for characteristic lesions. If none are found, this fact should be frankly stated. In case of doubt, specimens should be collected, carefully packed, and shipped to the department laboratory for examination. (See Circular Letter No. 24.) It is often difficult to demonstrate the presence of glanders by an autopsy. Where animals are frequently tested, as is the case in the Army, the mallein or blood test often reveals the presence of the disease in its incipient state. In such cases the autopsy findings may be imperceptible to the naked eye.

3. All autopsies will be recorded on the back of Form No. 115, M. D., or on a separate slip of paper of the same size, and securely attached in case there is not sufficient space on the card. If the autopsy record comprises the only hospital or sick record of the case, the front of the card should show the notation "not on sick report" and otherwise be completed. The autopsy record will show the date, all findings in detail, the pathological diagnosis, and the name of the operator. The Form No. 115 for each case of glanders should show whether autopsy was made, and if there was no autopsy the reason should be stated.

4. The completed Forms No. 115 are a part of the permanent veterinary record of the command and will be carefully preserved. They will always be presented to a general veterinary inspector at his visit.

5. While no duplicate of these cards is called for by this office as a routine measure, a brief statement of the findings in glanders autopsies should be made in the special weekly report of communicable diseases. A numerical report of positive, negative, or doubtful findings is also required on the back of Form No. 102.

6. Further, on the receipt of this letter veterinarians of all commands will prepare a report of autopsies covering the period ending December 31, 1918, and forward same direct to this office. This report will contain all the data to be found on Form No. 115 or other records and should cover all the autopsies performed at the station. The following tabulation will be placed at the end of the report:

(*a*) Total number of animals destroyed for glanders.
(*b*) Number showing clinical signs of glanders.
(*c*) Number of autopsies on those destroyed for glanders.
(*d*) Number of autopsies with positive findings.
(*e*) Number of autopsies with negative findings.
(*f*) Number of autopsies with doubtful findings.

7. Hereafter this report will be rendered on June 30 and December 31 covering the preceding six months' period, and on the abandonment or demobilization of a station or command it will be prepared to cover the interval elapsing since the last report.

(*Cir. Letter No. 32, Veterinary Division, Surgeon General's Office, January 10, 1919.*)

Mallein Testing Prior to Sale; Certificate of Freedom from Communicable Disease.

1. Your attention is directed to the first sentence, second section of paragraph 54, S. R. No. 70, as amended by Changes No. 1, which reads: "All animals should be tested for glanders before they leave an auxiliary remount depot, and if the ophthalmic mallein test has been previously applied twice, a third test should not be administered until 21 days after the application of the second test."

2. These instructions are interpreted as applying to animals about to be sold from an auxiliary remount, a remount or an animal embarkation depot, or from any other command. In view of the general adoption of the intradermic test, the word "ophthalmic" in the sentence quoted should be ignored.

3. The remount division has announced its intention, in which it is cordially supported by this office, to prevent, if possible, the sale of glandered animals. Present arrangements provide that the veterinarian will certify as free from communicable disease all animals sold exactly as in the case of a rail shipment of public animals. A clean mallein test within at least 21 days is the essential basis of a certificate of freedom from glanders.

4. It is the duty of the veterinarian, therefore, to plan his mallein testing so that all animals which it is proposed to sell may be tested within the required period and at such time in advance of the sale as to cause no unnecessary interference with it. It should be noted further that animals in a lot or corral in which positive reactors are found are to be regarded as contacts. Such contacts must be isolated and retested at the end of 21 days. Full instructions for handling contacts are laid down in the first section, paragraph 54, and in paragraph 55, S. R. No. 70, amended by Changes No. 1.

5. The minimum requirements for a certificate of freedom from communicable disease under existing regulations are then as follows: That the animal shall have passed a negative mallein test within 21 days and known not to be a contact as defined in paragraph 4, nor exposed to glanders at any time subsequent to the test, and that the animal presents no external evidence of glanders or other communicable disease.

(*Cir. Letter No. 33, Veterinary Division, Surgeon General's Office, January 22, 1919.*)

Veterinary Meat and Dairy Inspection Service.

I. AUTHORITY.

1. The responsibility of the Veterinary Corps for the inspection of the meat and milk supplies for troops is defined by the following authorities:

[Extract from sec. 16, act of June 3, 1916.]

The President is hereby authorized, by and with the advice and consent of the Senate, to appoint veterinarians and assistant veterinarians in the Army, * * * as inspectors of meats for the Quartermaster Corps; * * *.

[Special Regulations No. 70.]

The Veterinary Corps will also provide for the inspection of meat-producing animals before and after slaughter and of dressed carcasses, and for the inspection of dairy herds supplying milk to the Army. (Par. 4, last section.)

The veterinary officer acting as meat and dairy inspector will inspect as often as may appear necessary the cows and the dairy farms from which the supply of milk (other than condensed or canned) is received. (Par. 38.)

He will make an inspection of carcasses of dressed meats delivered by contractors and will make an ante and post mortem inspection of any animals which may be slaughtered for food. (Par. 39.)

Any undesirable conditions found by him will be reported promptly to the commanding officer of the organization and to the division veterinarian. He will also make a report to the division veterinarian every Friday of the number and character of the inspections and examinations made by him up to noon of that day. (Par. 40.)

The veterinary service of a camp is under the direction of the senior veterinary officer on the staff of the camp commander, who will be designated as camp veterinarian. His duties as regards the camp veterinary service, including meat and dairy inspection, are the same as those specified hereinafter for a division veterinarian as regards the division, and he will make the same reports and returns * * *. (Par. 13½, C. No. 1, July 5, 1918.)

* * * The division veterinarian will also furnish the division surgeon with a copy of the weekly report on Form 110, M. D., and with copies of any special reports from the meat and dairy inspector, and will forward the original in each case through the commanding general to the director of the Veterinary Corps, Office of the Surgeon General * * *. (Par. 19, C. No. 1, July 5, 1918.)

[2d ind., A. G. O., 431.2 Misc. Div., Oct. 10, 1918.]

In future the inspection of meat, meat-food products, and dairy products for use of the Army will be conducted exclusively by the Veterinary Corps, as laid down in Special Regulations No. 70, War Department, 1918, and also in section 16 of the national defense act of June 3, 1916.

Unification of the control of meat inspection in one department is decidedly to the best interests of the service, and that this control can be better exercised by a branch within the Army is axiomatic. The Veterinary Corps, having professional qualifications for this work and being a part of the Medical Department which is charged with the responsibility of maintaining the health of the Army, is therefore the proper branch of the service which should exercise this function.

[2d ind., A. G. O., 333.96 Misc. Div., Feb. 3, 1919.]

The Veterinary Corps will be charged with the selection, inspection, and grading of beef purchased for the Army, being guided by the "Specifications for allotted fresh beef for the Army, Navy, Marine Corps, and the Allies."

2. Paragraph 3, first indorsement, A. G. O., 431.2 Misc. Div., November 26, 1918, authorizes the Surgeon General to issue regulations governing the inspection of meat and dairy products by the Veterinary Corps in accordance with the necessities of the service. In compliance with this authority, these regulations are published for the information and guidance of all concerned.

II. OBJECT OF INSPECTION.

1. The purpose of a veterinary meat and dairy inspection service is essentially hygienic. It is designed primarily to protect the health of troops by preventing the purchase or issue of meat and dairy products which by reason of their source, nature, or condition may be unsafe for food purposes.

This service is also closely involved with the requirements laid upon purchasing and supply officers that such products as they may handle must comply with the specifications under which they are purchased or issued. The defects to be looked for are such that both sanitary and compliance with specification requirements are logically and easily met in a single inspection made by the same individual. Two separate and distinct inspections are therefore unnecessary. At the same time this does not mean that both phases of the inspection are always in operation at the same time. The sanitary inspection is always made simultaneously with inspection for compliance with specifications and the two overlap and blend in many respects, but the former goes much further in that supplies must undergo inspection for their sanitary condition while in storage or at issue and at other times when the question of specification requirements is not considered at all. The veterinary inspector, furthermore, conducts inspections of storehouses, refrigerators, establishments, dairies, and milk herds which are wholly sanitary in nature. The veterinary inspector therefore performs important duties as a sanitarian in preventing disease in the Army.

III. ZONE SUPPLY OFFICES.

1. Veterinary personnel is assigned to duty with the O. D. P. & S. to inspect meats and meat products at time of purchase by zone supply officers for the Army at packing and slaughtering centers. This service includes selection, grading, and inspection. The inspection is for soundness, compliance with Government specifications, storage, handling, and shipment.

2. The senior veterinary officer reports to the officer of the O. D. P. & S., who is in general charge of the purchasing branches of the subsistence division as regards meats and meat products at the general supply depot, Chicago, Ill. The veterinary personnel assigned constitutes a detachment of the Veterinary Corps, Medical Department, of which the veterinarian is the detachment commander. As such he is responsible for the care, discipline, instruction, equipment, and assignment to duty of this personnel. (Par. 30, S. R. No. 70, C. No. 1.) It is contemplated that this detachment shall be available as a source of trained officers and men for assignment to zone supply offices and he should make recommendations to the officer in charge for such assignments to inspection duty in connection with purchasing of meats and meat products as their services may be required. He should see that such personnel is qualified in the technical duties of meat inspection. As the supervising meat inspector, he should exercise a general supervision over the performance of these duties by the veterinary personnel assigned to zone supply offices. Personnel is also trained in this detachment for general duty.

3. The senior veterinary officers of the various detachments at zone supply offices act as veterinarians of those detachments and under the officer in charge thereof are responsible for the meat-inspection service. Each one will prepare and forward monthly reports of personnel on Forms 111 and 47*a*, M. D., through the supervising meat inspector to the Surgeon General, and weekly reports on Form 110, M. D., through the zone supply officer to the supervising inspector, who will forward same through the officer in charge to the Surgeon General. Enlisted men are promoted and reduced under the provisions of paragraph 1c., Section IV, G. O. 58, W. D., 1918. Promotions to and reductions from the grade of private first class should be made by the supervising meat inspector on the recommendation of the senior veterinary officer of the detachment. Promotions and reductions in the higher grades are made by the Surgeon General on the recommendation of the senior veterinary officer of the detachment, approved by the supervising meat inspector. (See Circular Letter No. 13, as revised August 14, 1918, for full instructions.)

IV. PORTS OF EMBARKATION.

1. Meats and meat products intended for shipment overseas receive veterinary inspection at the port. The inspection covers soundness, compliance with Government specifications, storage, handling, and the storage and refrigerating accommodations of transports. Veterinary personnel assigned to the port for this duty is under the supervision of the senior veterinary officer, who has the duties and responsibilities of a detachment commander as described in paragraph 3 of Section III. He renders the same reports and returns to the Surgeon General, sending Forms 111 and 47*a* direct and Form 110 through the officer in charge.

V. SERVICE OF A CAMP, POST, OR OTHER INDEPENDENT COMMAND.

1. The veterinarian (senior veterinary officer present) of a camp, post, or other independent command is responsible for the proper performance of the meat and dairy inspection service thereof. (Par. 13, S. R. No. 70, and par. 13½, S. R. No. 70, C. No. 1.)

Veterinary officers detailed as camp or post meat and dairy inspectors act as assistants to the camp or post veterinarians in the larger commands. In the absence of personnel specifically assigned to meat-inspection work, the veterinarian performs these duties in person. When a camp or post meat and dairy inspector is the only veterinary officer present with a command, he automatically assumes the additional duties of the camp or post veterinarian.

Enlisted men of the Veterinary Corps with packing-house experience are assigned to assist the meat and dairy inspector. These men are not veterinary graduates, and consequently lack the qualifications of the veterinary officer, but their training fits them for reinspection of both fresh meat and meat products, and other duties pertaining to this service.

Such enlisted men at a station where there is no veterinarian report direct to the surgeon.

2. The meat and dairy inspection service of a station includes the inspection of meats and meat products received and issued by the local supply officer, the inspection of meats and meat products purchased from local butchers and dealers, and the inspection of the dairy herds and farms from which the milk supply is received.

The expression "meats and meat products" is used herein to include meats and meat products of all kinds, including lard and oleomargarine, also butter, cheese, poultry, eggs, and fish, but does not include vegetables, fruit, cereals, flour, or other miscellaneous food supplies of vegetable or mineral origin.

Animals procured by the Army for food purposes are inspected before and after slaughter.

3. The inspection of company kitchens, messes, or refrigerators for the purpose of examining food products which have already passed the required inspection at issue or receipt; the supervision of the milk supply after the milk leaves the charge of the dairyman; the inspection of restaurants, eating places, ice-cream, pasteurizing, and distributing plants, etc., and the collection of milk samples for laboratory examination are considered to be duties which pertain to the sanitary service, rather than to the limited and more clearly defined functions of the veterinary service.

In general terms, the veterinary meat and dairy inspection is essentially an inspection of elementary food products of animal origin made at the place of production, of purchase, or of original receipt or issue.

4. It is contemplated that this inspection shall cover all meats and meat products received by a command or any part of it whenever veterinary personnel is available for such duty. The supplies received at a base or other hospital should be included in the general inspection of the command. Experience at large camps has demonstrated that the service is most efficiently conducted by the operation of a camp order outlining the requirements and specifying a particular building or place as the only point of entrance of meats and meat products to the command. Supplies are here inspected at a specified time, passed or rejected, and all supplies inspected are appropriately marked or stamped by the inspector irrespective of prior inspection and stamping. The veterinarian should recommend to the commanding officer the issue and enforcement of an order of this description.

5. The meats and meat products received by the local supply officer should be inspected for soundness at time of receipt, while in storage, and at issue. The sanitary condition of the storerooms, methods of storage, and the methods of handling up to the time of issue should be observed and reported on.

Simultaneously there will be maintained such inspection for compliance with Government specifications as may be required by the supply officer. The veterinarian will ascertain these requirements through frequent conferences with that officer and, with the approval of the commanding officer, will see that adequate veterinary personnel for meat-inspection duty is available at such times and places as will meet the needs of the supply officer. The first requisite of an efficient inspection service is the establishment of the highest possible standard of cooperation.

This degree of cooperation should be maintained not only with the supply officer but also with representatives of the Bureau of Animal Industry, the United States Public Health Service, or other officials engaged along similar lines and with the sanitary officers of the command.

6. Inspection should be maintained at establishments slaughtering, storing, processing, or otherwise handling meats and meat products intended for local purchase when an efficient inspection service is not maintained thereat by the Bureau of Animal Industry or other competent agency.

The proprietor or operator of such establishment who proposes to supply any meat or meat product to a command should make application in writing to the commanding officer for inspection at his plant to cover the animals, meats, and products from which the supplies that are to be delivered are derived. This initial inspection should be conducted by the camp or post veterinarian, or his qualified representative. It should include a survey of the plant and premises to ascertain whether the same are in a sanitary condition, and whether facilities necessary to a proper conduct of the inspection can be provided. The inspector should also indicate to the proprietor or operator what changes or additions should be made for the correction of insanitary conditions, if any such exist, in or about the establishment, and specify the kind of inspection facilities to be furnished. When the establishment has been placed in an acceptable condition, the veterinarian should recommend to the commanding officer that the application be approved.

The inspection service will include sanitary inspection of the establishment and premises for construction, equipment, and methods of operation; ante-mortem and post-mortem examination of animals slaughtered; and the inspection of products, including methods of processing, manufacture, handling, and storage. Sanitary inspections will be made at least once every month and followed by a written report. (Sec. VII.)

The inspector should make an ante-mortem examination of all animals from which any meat or product is to be offered for the use of the command. If upon such examination an animal is found to be affected with any disease or condition that may render its meat in whole or in part unfit for human food, such animal should be excluded from the lot of animals to be slaughtered for the use of troops. All animals which are sound and fit for food so far as can be determined on the ante-mortem examination should be passed for further inspection at the time of slaughter.

The post-mortem inspection should be performed in all instances, if practicable, at the time of slaughter and should be thorough in nature and extent. When disease or abnormal condition is found to exist in any degree on such inspection, the officer should determine the fitness or unfitness of the meat in accordance with instructions issued from this office and the standards maintained by the Bureau of Animal Industry. Any carcass judged by such rules and principles to be other than sound, healthful, wholesome, and fit for human food should not be approved for the use of troops.

Product inspection should include an examination of the ingredients entering into the various products; the sanitary condition of equipment, cleanliness of employees, and methods of handling meats; the processes involved in salting, packing, pickling, curing, smoking, rendering, sausage manufacture, and canning and reinspection of the finished product.

An examination of the finished product should also be required upon delivery at the station. When such products are to be acquired by a supply officer, inspection for compliance with specifications will be included.

Each carcass passed on inspection at local slaughterhouses, primal parts of such carcasses, and sausages and other meat products in animal casings prepared under supervision from parts of such carcasses will be marked by the inspector with a stamp provided for that purpose. When such meats and meat products can not be stamped because of their character or small size, the stamp will be placed on the container or package.

7. When an establishment is not properly operated or does not maintain a satisfactory standard of sanitation and correction of these defects can not be obtained after the matter has been taken up in writing with the proprietor or operator, written recommendation should be made to the commanding officer that its products be excluded from the command.

The inspection and supervisory work of the Bureau of Animal Industry or other competent agencies in local establishments need not be duplicated so long as the standard maintained is satisfactory to the veterinarian and approved by the commanding officer and when reports of these inspections containing the necessary information are available, but, with these exceptions, the inspection requirements of paragraph 6 should be applied to establishments selling Bureau of Animal Industry inspected meats and meat products; and these and all other meats and meat products should be subjected to veterinary inspection on delivery at the station.

It is believed that a far better class of meats will be insured if the supply of a station is restricted invariably to meats and meat products slaughtered or prepared under Bureau of Animal Industry inspection and bearing the inspection stamp of the same. While the impracticability of this procedure in some instances is admitted, nevertheless, its adoption is urged wherever circumstances permit.

8. When meats and meat products received by or offered for sale to the supply officer are found on delivery to be affected with an unsoundness of slight or limited extent which in the opinion of the inspector can be removed by trimming, wiping, or other manipulation, the treatment which the inspector considers advisable should be recommended by him to the supply officer, and after such treatment has been applied, a reinspection should be made.

Meats and meat products in the possession of the supply officer which are found to be unsound, unwholesome, or otherwise unfit for food purposes, and thus unsuitable for issue, should be reported by the inspector to the supply officer for survey and to be denatured or destroyed.

When meats and meat products which are the property of civilians are rejected the consent of the owner to denature or destroy them should be obtained if possible and the inspector should see that they are properly disposed of. If the owner refuses his consent, indicating a purpose to dispose of the unsound product elsewhere, the local health authorities should be notified by the veterinarian, and if proper disposition can not be obtained by this method, recommendation should be made to the commanding officer that permission to supply meats and meat products to the troops be made contingent upon the proper inspection and disposition of articles condemned by the inspector. In order that the purpose of the inspection may not be defeated, the exclusion of the troops from public eating places may be recommended whenever such places purchase or serve supplies which have not been inspected or which may have been rejected.

VI. DAIRY INSPECTION.

1. The inspection of the dairy farms from which the milk supply is obtained should include an examination of the cows for health and cleanliness; the adaptability, suitability, and sanitation of the stable, milk house, vessels, and utensils; the facilities for cleansing and sterilizing the latter; the methods of milking and of handling the milk; and the provisions for cooling and storing the milk.

2. It is considered necessary that milk shall be obtained from healthy cows and produced and handled under hygienic conditions, even when it is to be pasteurized. Pasteurization of the milk supply, therefore, does not relieve the Veterinary Corps of the responsibility of inspecting the dairy cows and farms.

Multiplicity of dairies, distance of dairies from the station, or lack of transportation are not reasons for failure to inspect unless their distance and number render it a practical impossibility with the personnel available, and special report of such cases should be included in the weekly report to the Surgeon General. The only restriction contemplated by these regulations on authorizing a dairy to supply milk for the use of the troops is that it shall submit to the official inspection and meet the requirements thereof fully and at all times.

Adequate transportation should be provided for the inspector.

VII. REPORTS.

1. Wherever a meat inspection service of any kind is maintained, the inspector will report weekly on the meats and meat products inspected on Form 110, M. D. (revised), in conformity with the instructions printed thereon. Under the head of remarks, reports of the condition of establishments, storage rooms, etc., and the methods of operation thereof should be entered, but complete veterinary sanitary inspections, including the initial inspection of an establishment, should be reported on a separate sheet attached to the weekly report.

Inspections of dairies will also be reported on an attached sheet, the name of the owner or operator and the number of cows in each dairy being given, together with a statement as to whether or not, in the opinion of the inspector, the dairy should be accepted or continued as a source of milk supply for the command. When rejection is recommended, the conditions on which the recommendation is based should be briefly and clearly stated.

In the event of no dairies being inspected during a week, a notation to that effect should be made at the bottom of Form 110, M. D. (revised).

(*Cir. Letter No. 34, Veterinary Division, Surgeon General's Office, March 22, 1919.*)

Instructions to Veterinary Officers on Duty with Animal-Purchasing Boards.

With the view of establishing a higher standard of efficiency among the veterinary officers assigned to animal-purchasing boards, attention is directed to the instructions concerning the examination of horses and mules for soundness and the sanitary conditions to which such animals may be subjected during the process of collection prior to inspection and subsequent to acceptance.

It therefore becomes necessary for each officer detailed to such work to acquaint himself with all regulations and instructions which have any bearing whatsoever upon the duties for which he will be held responsible.

Special Regulations No. 70 (amended), paragraphs 67, 68, and 69, cover more particularly the reports which are required. Paragraph 68 refers to the reports to be submitted on Form 109, M. D. (revised May 1, 1918). Any sick or unsound animals accepted over the protest of the veterinary officer (Cir. Letter No. 9, par. 10) will also be reported on this blank. Paragraph 69 provides for special reports in the form of recommendations on undesirable sanitary conditions to which the animals are subjected either before or after purchase. The enforcement of the necessary corrective measures is provided for under the terms of the Agreement for Purchase of Public Animals (Q. M. C. Special Form, sec. 10) when the animals are being purchased under the contract method. Under the open-market method of purchasing public animals, the sanitary condition of the source of the animals, especially if the presence of an infectious disease is suspected, may be controlled by recommendations to the purchasing quartermaster, who is authorized to recommend the discontinuance of purchasing of animals exposed to infectious diseases which may be sufficient cause to consider the animals unhealthy. It therefore becomes the duty of the veterinary officer to ascertain, in so far as possible, the origin of the animals being inspected with the view of determining the possibility of exposure to communicable diseases. (Cir. Letter No. 9, pars. 2 and 3; Cir. No. 18, Secs. I, II, and III; Cir. No. 22, Secs. I and II; Cir. Letter No. 27, Sec. II, par. 4.)

The cleaning and disinfection of stock cars prior to loading public animals is highly essential, especially since the danger of infection from this source has been greatly increased during the past few years, owing to the excessive traffic in horses and mules. Railroad companies are required to furnish cars which have been cleaned and disinfected under the provisions of Circular No. 20, which has been approved by The Adjutant General of the Army and ordered carried into full force and effect. The provisions of this circular have also been approved by the chief of inland traffic service.

In connection with the transportation of horses and mules for the Army, all shipments of live stock made by the War Department will be handled in strict accordance with the 28-hour law. Attendants are directed not to sign release permitting confinement for a longer period without unloading for feed and rest in accordance with the law regulating the handling of live stock, except in the most extreme cases, when, due to unavoidable delays, it may be impracticable to unload within the 28-hour limit.

The ophthalmic mallein test only will be used in testing animals at the time of purchase. Detailed instructions for applying this test are contained in Circular No. 28. In addition, veterinary officers are required to apply the mallein to the left eye and to read the results in person (Cir. No. 18, par. 1), and will carry out every detail in its proper application. They will be held strictly responsible for failure to comply with instructions and to detect cases of glanders. In so far as practicable, the mallein will be applied at such times as will permit observations for reactions on the twelfth, eighteenth, and twenty-fourth hour in good light, and careful individual inspection of each eye treated. Suspicious reactors will be tied in a convenient place and kept under close observation until a decision is made, or until they are disposed of in accordance with the provision of amended paragraph No. 67 of S. R. No. 70, in which case the veterinary officer at the depot or camp to which such doubtful reactors or contacts are shipped will be promptly notified by letter of the circumstances.

An ample supply of mallein will be anticipated, in so far as possible, by the inspecting veterinarian, who will keep the zone veterinarian advised from time to time as to his probable needs, in order that the latter officer may act judiciously in submitting his requisitions. An oversupply of this product should not be contemplated, since it becomes unreliable after a limited time, and the demand from other sources is such as to tax the facilities for its manufacture. Sometimes mallein undergoes changes which render it unsuitable for use. Therefore each vial should be carefully inspected for deterioration or other changes before being used.

Under the contract system of purchasing, all reactors are rejected even after being branded. Therefore the War Department has no jurisdiction, and the control of the animal comes within the jurisdiction of the State veterinarian or live-stock sanitary board of the State in which the reactor is discovered. (Q. M. C. Special Form D, sec. 9; Cir. No. 9, par. 9; Cir. No. 27, Sec. II, pars. 4 and 5.)

* * * * * * *

In examining horses and mules for soundness, too little importance has been attached to the general health of the animals. If the horse or mule is sick, he is not considered a sound animal and should be disposed of in accordance with the last sentence of paragraph 5, Circular Letter No. 9. The acceptance of such an animal is subject to protest by the veterinary officer of the purchasing board. (Cir. Letter No. 9, par. 10.)

Likewise, an animal which may be considered unsound from other causes will be so announced to the purchasing quartermaster, and its acceptance will be protested by the veterinarian. If the advice of the veterinarian is disregarded, he will make a report, giving the number and description of the animal and its physical condition.

In judging for soundness, the age of the animal and the work which will be required should be kept constantly in mind. While there are many different methods of procedure, each has for its object a thorough and systematic inspection for the detection of pathological conditions and irregularities which render the animal physically or otherwise unfit for military service. The method usually employed by veterinary officers will frequently be altered more or less to meet the conditions under which the animals are being inspected. In order to make a thorough examination, however, it is essential to have good light and to exercise the animal under inspection on a solid surface, free from loose or soft extraneous material, such as shavings, straw, etc. The method of inspection employed herein is merely to cover the subject in a systematic manner and to mention the conditions more commonly encountered.

Mouth.—In opening the mouth for judging the age, a careful inspection will be made for absent molars, dental caries and fistulæ, excised tongue, injuries, evidence of "cribbing" or "bishoping," and abnormalities such as "parrot mouth," etc. When this is done, the finger should be placed over the maxillary artery for the pulse rate, thence to the submaxillary space for swollen submaxillary lymph gland, and upward over the parotid salivary gland to the thyroids. It is doubtful whether labial paralysis would be detected at this time. Therefore, observation should be made while the animal is exercised or at another time.

Causes for rejection:

Absent molar or incisors.
Dental caries.
Dental fistula.
Excised tongue.
Cribbing.
Salivary calculus.
Salivary fistula.
Dental irregularities or injuries sufficient to prevent proper mastication.
Labial paralysis.
"Parrot mouth," excessive.
Swollen glands or abnormal pulse rate, indicating infection.
Under age.
Over age.

Nose and face.—The nasal fossæ will be examined closely for polypi or tumors, and the septum for nasal ulcers or cicatrices. During this examination evidence of osteoporosis and diseases of the facial sinuses may be observed. A nasal discharge may indicate the presence of a diseased tooth or a diseased condition of the sinuses of the head or guttural pouches, or a catarrhal condition of any of the air passages of the head as well as the presence of glanders.

Causes for rejection:

Polypi or tumors.
Nasal ulcers or cicatrices.
Osteoporosis.
Diseases of the facial sinuses.
Diseases of guttural pouches.
Purulent nasal discharges.

Eyes.—Perfect vision is essential, and any condition of the eye which impairs or interferes with its proper function will be regarded as unsoundness. It is therefore highly important to examine the eyes closely under the most favorable conditions in order to detect pathological conditions resulting from one or more attacks of periodic ophthalmia. During an attack the opaque condition is readily discernible, but as it diminishes in severity this condition may not be so readily observed. After one or more attacks of this disease, the iris of the affected eye is frequently left adhered to the crystalline lens, which prevents the proper contraction and dilatation of the iris. This condition will only be observed by close inspection of the eyes in a good light with a dark background and by comparison of the two eyes. When a difference in the normal contraction and dilatation of the iris can be detected, the eye will be considered defective. Flocculi may also be seen in the lower part of the chamber when looking through the opening of the curtainlike iris. Among the more important diseased conditions which impair vision and which are causes for rejection are:

Opacities.
Periodic ophthalmia in any form.
External and internal ophthalmia due to traumatisms or foreign bodies.
Ulcers of the cornea.
Cataract.
Amaurosis.
Tumors.
Staphyloma.
Purulent conjunctivitis.

(Examining officers should provide themselves with a small candle and electric flashlight, which will be of material assistance in making a close inspection of the eyes, mouth, and nose of animals. In doubtful cases the eyes should be subjected to the candle test and, if necessary, to other physical tests.)

Ears.—Owing to the acute sensitiveness of the ears, pathological conditions of these organs are indicated by abnormal positions or carriage which are readily noticed. Even in the absence of a specific disease or injury, a "lop-eared" equine is defective, and since the sense of hearing is more or less impaired, the condition should be considered an unsoundness. Moreover, they are also undesirable on account of the loss of one of their greatest means of expression, especially of a timid or ill disposition. Diseased conditions such as parasitic infestation, warts or abnormal growths, canker, inflammation of the external or internal ear, constitute unsoundness.

Causes for rejection:

Deafness, partial or complete.
Parasitic infestation.
Warts or abnormal growths.
Canker.
Inflammation of external or internal ear.
Ears dropped or lopped.
Fistula (dentigerous cysts).

Poll.—This region will be examined for poll evil or injuries which may result in this condition. The presence of either is sufficient cause for rejection. Cicatrices or scars indicating surgical interference is also cause for rejection.

Neck.—The more important pathological conditions of the neck are usually detected at a glance. However, there are other affections confined to this region which may not be detected while this part is under observation. Laryngeal hemiplegia or tumors of the nasal fossæ and pharynx may not be determined until the animal is exercised for soundness of wind.

Causes for rejection:

Distortion of the neck.
Hypersensitiveness of collar seat.
Sublaxations and fractures of the cervical vertabræ.
Goiter.
Phlebitis.
Tumors of the pharynx or esophagus.
Laryngeal hemiplegia.
Deformities of the trachea.

Shoulders.—It is highly important that the shoulders of draft animals especially be free from abscesses, collar bruises, denuded scars, and callosities. Close inspection of the shoulder muscles for atrophy (sweeny) and the results of the well-known empiric treatment will be made.

Causes for rejection:

Abscesses.
Bruises.
Callosities.
Atrophy.

Withers and back.—These parts will be examined for injuries which may interfere with the proper use of the harness or saddle and required military equipment. Chronic conditions, such as "sitfasts" and fistulæ, or cicatrices and hypertrophied areas as a result of surgical interference may be observed. While excessively high withers may be congenital and judged under conformation, in many cases, this condition is intensified in appearance by the atrophied condition of certain muscles in this region when it becomes a question of unsoundness.

Causes for rejection:

Sway back or roach back, excessive.
Bruises.
Fistula.
Sitfasts.
Surgical cicatrices.
Excessively high withers, due to pathological conditions.
Excessively low withers due to pathological conditions.

Body.—While the conditions mentioned under "withers" and "back" properly belong to this region, they have been treated separately. Among the conditions observed in this region may be mentioned fractured ribs, hernia, scirrhous cord, etc. Recovered cases of fracture of this kind sometimes leave a depression or enlargement which may interfere with the harness or saddle.

Causes for rejection:

Fractured ribs.
Hernia.
Cryptorchidism.
Scirrhous cord.
Stallions.
Amputated penis.
Tumors of the sheath or penis.

Fore leg.—By observing this part from the front and side, the abnormal conditions common to it are as a rule quite noticeable.

Shoe boils or inflammation of the mucous bursa of the posterior surface of the ulna may develop into hematomata, and while this condition may not cause lameness until it becomes an extensive bursitis, the fact that the cause is most frequently one which can not be kept removed, it is apt to progress. Therefore, shoe boils are considered an unsoundness.

"*Broken knees.*"—Horses and mules sometimes show scars or cicatrices on the anterior surface of one or both knees, caused usually by falling or slipping upon hard roads or streets or in jumping obstacles. This condition in itself is not considered an unsoundness unless the normal flexion or mobility of the carpal joint is impaired. It is, however, suggestive of a stumbling animal, and in passing judgment upon the condition extreme care should be exercised.

Splints or exostoses of the carpus and metacarpus are generally considered blemishes until they become excessive in size or by their location and proximity to articulations or tendons may interfere with the free movement of certain parts. If they are the cause of lameness or by their high or deep position tend to produce lameness or are sensitive on palpitation, they are to be judged as unsoundness. Extreme precaution will be taken in passing on this condition.

In judging windgall, the inspecting veterinary officers should be guided by the extent and character of the distention of the superior cul-de-sacs of the metacarpophalangeal or great sessamoid sheath. When the distention of this sheath appears excessive and hard or is accompanied by inflammation or distention of the synovial bursa of the joint, it will be regarded as an unsoundness. Distentions of bursa, tendon, or synovial sheaths, when excessive or when accompanied by inflammation, should be considered as unsoundness.

The word "roady" is frequently applied to horses which show a worn appearance about the legs. In this general condition may be seen small windgalls, abnormal osseous conditions around the metacarpophalangeal articulation, and a tendency to go over at the knees. Animals showing this condition are considered unsound.

Causes for rejection:

Ringbone.
Tendinitis.
Contracted tendons.
Bowed tendons.

Knuckling over.
Shoe boils.
Splints, depending upon location, etc.
Windgalls, depending upon extent and character.
Extensive distention of bursæ, tendon or synovial sheaths.
"Roadiness."
Knee-sprung.
"Broken knees."
Cicatrices or new growths suggestive of neurectomy.

Foot.—A close examination of this part is highly important owing to the many pathological conditions to which it is subject. The foot is likewise a most important part of a serviceable animal, and any diseased condition which affects its structure and proper growth will be regarded as an unsoundness.

Sidebones constitute an unsoundness. Cuts and injuries may also be considered as such when they cause undue ossification of the lateral cartilages which interferes with the physiological function of the feet. Among the more common causes for rejection are:

Sidebones.
Quittor.
Contracted heels.
Laminitis.
Drop-sole.
"Seedy" toe.
Corns.
Deep injuries or calk wounds to coronet or wall.
Thrush or canker, involving the deeper structures.
Toe-crack.
Quarter-crack.
Defective development of hoof wall.

Stifle.—During the inspection of horses and mules, little opportunity is afforded to detect luxation of the patella unless they are pivoted first on the front and then on the hind feet, backed and trotted forward. This method will also often reveal obscure hock lameness and other conditions which may otherwise escape detection. Attention is drawn to this method, since some animals slip their patellæ when backed from the stall, and after going forward a few steps the condition voluntarily corrects itself. Such animals are regarded as unsound.

Chronic gonitis or chronic inflammation of the stifle joint is met with following acute synovitis due to strains and concussion and occurs more frequently in heavy horses. The dropsical form of this affection is infrequently attended with manifestations of inconvenience, but a characteristic distention of the joint capsule is quite noticeable. When the condition is bilateral, the animal drags the toes, especially when made to trot. In unilateral cases the affected limb is often lifted spasmodically, as in spavin or stringhalt. Traces of blisters and cauterization denote that the region has been treated, and is considered sufficient cause for rejection.

Causes for rejection:

Luxation of patella.
Gonitis.
Injuries.
Traces of blisters, etc.

Hock.—This region is predisposed to many serious pathological conditions. While some of them are congenital, others are caused by excessive strains to which the part may be subjected, and many are of traumatic origin. Injuries and enlargements on the outer surface of the hock which interfere with free movement or mobility are causes for rejection.

Many animals of the heavier type show an osseous condition of the inner surface of the hocks, which is frequently spoken of as "rough hocks." The term is usually employed by dealers to minimize its importance and to distinguish it from spavin. In passing judgment on this condition close inspection should be made for worn-off or blunted toes as evidence of dragging the toe. Upon being pivoted, the animal may show a "jerkiness" or "stringiness" of the hock. In the absence of abnormal movements and dragging of the toe, such hocks will be considered sound, provided both hocks are symmetrical in appearance.

The term "capped hock" is collective and includes all swellings on the point of the os calcis, whatever their cause. Below the skin covering the tuber calcanei in the horse is usually to be found a subcutaneous bursa, lying on the upper or posterior surface of the superficial digital flexor (flexor pedis perforatus); under this again is a true bursa for the tendon, which glides over the cartilaginous cap of the tuber calcanei. The condition known as "capped hock" may have its origin in any of these structures. It may therefore consist—

(1) Of inflammation or chronic thickening in the cutis or subcutis; inflammation in the lower portion of the thigh is sometimes followed by swelling, due to gravitation of extravasated fluid (false capped hock);

(2) Of hydrops of the bursa subcutanea; this is one of the commonest causes of capped hock;

(3) Of a swelling originating in the superficial digital flexor (flexor pedis perforatus) at the point where the latter covers the joint of the hock, forming a cap;

(4) Of hydrops of the bursa tendinea of this tendon; or, finally,

(5) Of thickening of the point of the hock, due to disease of the tendon of the superficial digital flexor.

Causes for rejection:

Bone spavin.
Bog spavin.
Thorough-pin.
Curb.
True capped hock.
String-halt.
Injuries.
Enlargements on outer surface.
Disease of the tendons and tendon sheaths in tarsal and metatarsal regions.

Hips.—In viewing the animal from the rear close inspection will be made for capped hips. This condition, if simple, may be passed, but if quite noticeable, should be regarded as an unsoundness.

Tail, anus, and vagina.—While horses which have been docked are not considered unsound, this condition when observed should be reported to the purchasing quartermaster. Other causes for rejection are:

Paralysis of the tail.
Fractures of caudal vertebræ.
Tumors of the anus, vagina, or tail.
Prolapse of the rectum.
Rectovaginal fistula
Anal fistula.

Wounds from interfering.—Faulty conformation, bad shoeing, and overwork are the principal causes of interfering. Horses that are "base narrow" or that have crooked legs are quite apt to interfere. Shoes that are put on a foot that is not level or applied in a twisting position or shoes wide at the heel will often cause interfering and injury. Animals that are driven at fast work until they become nearly exhausted may be expected to interfere. Such cases are frequently observed in young horses that are driven over rough roads, particularly when so nearly exhausted or weakened from disease or inanition that the feet are dragged forward rather than picked up and advanced in the normal manner. Wounds inflicted by striking the extremities in this manner present various appearances and occasion dissimilar manifestations. The hind legs are almost as frequently affected as the front, and the fetlock region is most often injured, though wounds may be inflicted to the coronet. In front, the carpus is sometimes the site of injury. When only an abrasion is caused, little if any lameness occurs, but where interfering is continued and nerves are involved or subfascial infection and extensive inflammation succeed such abrasions, marked lameness and evidence of great pain are manifested. Frequently in chronic cases affecting the hind legs the fetlock assumes large proportions, and at times during the course of every drive the subject strikes the inflamed part, immediately flexing and abducting the injured member, and hops on the other leg until pain has somewhat subsided. Interfering is much more serious in animals that are used at fast work than in draft horses. In light-harness or saddle horses it may render the subject practically valueless or unserviceable if the condition can not be corrected.

Wind.—In exercising animals for soundness of wind a close inspection for polypi and foreign objects within the nasal passages will be made. There is perhaps no better opportunity afforded than at this point of the inspection to observe the animals for hypersensitiveness of the collar seat, cerebral abnormalities, and immobility of the lips, especially when the harness or saddle is being placed.

Causes for rejection:

Laryngeal hemiplegia (roaring).
Pulmonary emphysema.
Polypi or tumors.

Vices.—While "cribbing" or "wind sucking" is frequently suggested by the wear of the incisor teeth, it is not always a reliable criterion. If an opportunity is afforded to inspect the stalls occupied by horses, sufficient evidence will often be found to convince one that the animal is a "cribber" or "weaver." While this is usually impracticable in purchasing horses and mules under the contract system, yet if veterinary officers would busy themselves by making casual inspections through the stables, shed, etc., many such cases can be identified. An effort should also be made to detect vicious striking and kicking animals or those which are bad "halter pullers."

The inspecting veterinary officer should always be on the alert with the view of detecting evidence of obscure organic diseases and such communicable diseases as mange, ringworm, etc.

Special effort should be made to detect pregnant mares and those which are suffering from diseased generative or urinary organs. Often such animals are vicious kickers. Rectal examination should be made of mares showing any evidence of pregnancy.

Lameness.—Many pathological conditions which cause lameness have not been mentioned, since the mere fact that lameness exists is sufficient to pronounce the animal unsound.

Healed wire cuts and injuries which affect the function or free movement of a part, and which tend to make the animal unserviceable under continuous service, should be considered defects.

Blemishes.—In the examination of horses and mules for soundness particular attention should be given to the nature and location of blemishes of all kinds, since these are frequently responsible for defects which would place the animal in the unsound class.

A blemish may be described as a visible condition resulting usually from an injury. It may be osseous, cicatricial, atrophied or hypertrophied, and of varied form. It does not interfere with the usefulness of the animal, but may affect the selling value.

A pathological defect is a visible or invisible condition resulting from a disease process or injury which interferes with the usefulness of the animal.

In judging the soundness of horses and mules for military use the inspecting veterinary officer is often confronted by an animal which shows no specific unsoundness but which manifests a general physical condition by his attitude and mobility that is very suggestive of one whose services would be quite limited under Army conditions and whose soundness is questionable. When such cases are encountered it is the duty of the veterinarian to make known his opinion to the purchasing quartermaster and to recommend that the animal be at least held for closer examination and observation before acceptance.

(*Cir. Letter No. 35, Veterinary Division, Surgeon General's Office, April 4, 1919.*)

Report of Discharged Veterinary Officers.

1. Immediately upon discharge from the service of officers of the Veterinary Corps, a report will be rendered by the senior veterinary officer on duty at the station to the Surgeon General, attention Veterinary Division, giving the following data, viz:

Name..
Rank.. Age...........
Date of entry upon active duty, present emergency..............................
Date of discharge..

Final rating:

Physical.	Intelligence.	Leadership.	Personal qualities.	General value.	Total.

Duty best fitted for..
Home territory..
    Camp or remount depot hospital..
    Remount depot..
    Camp organization..
    Garrisoned post..
    Other unit..
Theater of operations..
    Regiment or other unit..
    Mobile veterinary unit..
    Veterinary hospital..
Administrative..
*Professional..
Physically fit for field service..
Remarks..

This information is necessary in determining the qualifications of officers to be commissioned in the new reserve corps.

(*Cir. Letter No. 36, Veterinary Division, Surgeon General's Office, April 9, 1919.*)

Important Veterinary Principles of Horse Breeding.

I. INTRODUCTION.

1. Veterinary officers on duty at remount depots where the breeding of horses is contemplated should be prepared to render valuable professional assistance in this work. With this object in view, attention is first directed to the relation of veterinary medicine and hygiene to animal husbandry and to the importance of a thorough knowledge of the several veterinary subjects which have a close bearing upon the work. Since it is fully contemplated that standard books on obstetrics and sanitation will be freely consulted, it is only intended to discuss briefly some of the important subjects with the view of correlating the more salient phases with special reference to the breeding of horses by the Government.

2. In the breeding of horses it should be borne in mind that undesirable characteristics of the sire and dam may also be transmitted, and this established fact plays an important rôle in the common practice of breeding by selection. Therefore all animals selected for breeding purposes should be free from communicable disease and should likewise be free from pathological defects or unsoundness which may be transmitted to the offspring. Hence it should be the duty of the veterinarian to examine carefully each animal in order to establish the presence or absence of such conditions as bone spavin, ringbone, pulmonary emphysema, string-halt, periodic ophthalmia, etc. The physical examination of the animals should be thorough and should include close inspection of the male and female generative organs, so as to detect such organic affections or abnormalities as would preclude the normal birth of healthy, fully developed foals.

Frequently mares possessing many points which make them highly suitable for breeding purposes are found to be sterile or barren from different causes. Further, it is not uncommon to encounter mares affected with a distorted uterus or cystic ovary. Malformations of the uterus or pelvic cavity may result in the loss of both dam and foal at the time of parturition. Mares suffering from a diseased ovary become a menace in that they are in a state of chronic estrum (nymphomania) and after repeated efforts may not become impregnated. The semen of stallions whose ability to reproduce has been undetermined should be subjected to microscopic examination before serving mares selected for breeding purposes.

3. The exposure to which the external genitals of horses are constantly subjected through the medium of extraneous material such as stable débris and accumulations of excretions and secretions greatly enhances the danger of introducing foreign material and microorganisms during coition. It is believed that failure to carry out proper sanitary measures in breeding constitutes

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* "General practitioner," "surgeon," "meat and dairy inspector," "transport veterinarian," "pathologist," "bacteriologist," "examiner for soundness," "sanitation."

a very important factor in the large percentage of misconceptions and abortions and often menaces the health of valuable brood mares and stallions.

4. By the adoption of measures which will largely minimize the undesirable conditions mentioned herein, the percentage of full-term, healthy foals obtained from a given number of brood mares should be greatly increased.

II. COMMUNICABLE DISEASES.

1. *Glanders.*—Owing to the wide dissemination of glanders infection in this country during the past few years great vigilance should be exercised in carrying out instructions for the control of this disease. The danger of transmitting the infection during breeding and through channels other than the genital tract must not be underestimated. Therefore, existing regulations covering routine mallein testing for all Government animals if fully complied with are adequate for the protection of those used in breeding.

2. *Dourine.*—Among the communicable diseases in this country affecting breeding horses, dourine is one of the most important. Since its introduction into the United States in 1885, outbreaks have occurred in North and South Dakota, Nebraska, Iowa, Montana, New Mexico, Arizona, and Wyoming. In the spring of 1918 the infection was found to persist in the vicinity of Glendive, Wibaux, Scobey, West Fork, and McAha, Mont. Extreme precautions should be exercised to prevent the introduction of this disease among the Government animals. The most satisfactory method of detecting dourine in its incipient stage consists in subjecting the blood of all animals intended for breeding purposes to the complement-fixation and agglutination tests. By having the blood of all such animals thus tested, it will eliminate the possibility of breeding an affected animal as well as of infecting a sound animal. All Government-owned stallions and mares must pass a negative blood test for dourine. (See Cir. Letter No. 25, Sec. V.)

3. *Contagious abortion.*—While this disease may also be diagnosed in its early development by means of laboratory tests, it is believed that until its presence is suspected the application of the blood test is unnecessary. However, any mare showing an abnormal vaginal discharge or other suspicious symptoms should not be bred until she has been proved to be free from contagious abortion. In the meantime, such animals should be isolated and every possible sanitary measure taken pending final diagnosis. Premature birth of a foal should be sufficient reason for a prompt investigation with the view of determining whether the cause was of an infectious or traumatic origin.

4. Privately owned animals should be subjected to an examination by the veterinarian for freedom from communicable disease before they are admitted to the reservation or allowed to be bred to a Government stallion, and negative tests—intradermic mallein for glanders and blood test for dourine—should be insisted on in every case. Such animals should be under observation during the testing and this should be arranged at convenient places outside the reservation. If the mallein test is not conclusive, requiring the examination of a blood specimen, a longer delay will be necessary.

If for any reason it is found necessary to introduce such animals into a part of the reservation, the following precautions should be mandatory:

(*a*) The place selected for their isolation should be apart from places where public animals are kept and should be accessible without passing through the depot. Under no circumstances should any depot animals be permitted there.

(*b*) It should have its own water supply.

(*c*) No stable implements of any kind should be taken there from the depot.

(*d*) No personnel on duty or employed at the depot other than the veterinarian and such assistants as may be absolutely necessary for testing and breeding purposes should be allowed at that place.

(*e*) Persons caring for animals at the place selected should not be permitted to enter any other part of the depot.

(*f*) As soon as negative tests are reported on these animals and they otherwise appear free from communicable disease, it is permissible to introduce them into the depot.

(*g*) If at any time one of them is found to be affected with glanders, dourine, contagious abortion, or any other communicable disease, it should at once be removed and the place of isolation should be thoroughly disinfected in accordance with the rules laid down in paragraph 55, S. R.

No. 70, C. No. 1, for disinfecting after glanders. If the disease is reportable, the State veterinarian should be notified. (Par. 87¼, S. R. No. 70, C. No. 1.)

(*h*) In general, the place where untested animals are isolated should be regarded exactly as if it were known to be infected with glanders, dourine, contagious abortion, or other communicable disease and an absolute quarantine should be maintained against it.

5. Should it be impracticable to adopt all the foregoing precautions because of the objections of the owner or for other reasons, artificial impregnation becomes the only procedure permissible. Privately owned mares which show suspicious symptoms of dourine, glanders, or contagious abortion should not be bred by any method until the diagnosis is cleared up, and if it is positive, such animals should not be further considered for breeding.

The following rules should be enforced in using artificial impregnation with animals of this class:

(*a*) The mare must be free from hereditary unsoundness and apparently free from all communicable diseases.

(*b*) She must be excluded from the reservation, except as provided above, and from all contact with the stallion or any other Government animal.

(*c*) The mare from which the semen is obtained, i. e., the mare served, must be free from glanders, dourine, or other communicable disease.

III. CARE OF THE STALLION.

1. The general care and management of the stallion through the breeding season may be summarized in a discussion of the feeding, exercise, regulation of service, and grooming. It must be borne in mind that stallions improperly fed and exercised are not in a condition conducive to getting a large proportion of strong healthy colts. The temperament and digestion should be studied in order to maintain the physical condition at the highest possible point. The common error is to overfeed and underexercise. The mutual balance between food and exercise is then the key to condition of the stallion in service. The most effective prescription employed by a prominent veterinarian in one of the most extensive horse breeding districts of this country is "Halve the ration and double the exercise when the stallion is not giving a vigorous, sure service."

If a horse is gaining over his normal weight, increase his exercise first, and if he continues to gain, reduce his ration. If he falls below normal weight and is receiving only a reasonable amount of exercise, increase his ration first, then if necessary reduce the exercise. It is generally the gain in weight rather than the loss which has to be met. A loss in weight may also be attributable to digestive disturbances caused by parasitic infestation or irregularities of the teeth and oral cavity. As a routine, the mouth and teeth of stallions should be carefully inspected at least once a year, and abnormal conditions corrected before the breeding season begins.

The fact that stable vices, such as weaving, cribbing, and masturbation, are quite common among stallions will serve to emphasize the necessity of ample exercise throughout the entire year, since these acquired habits are to a large measure directly due to lack of exercise and the nervous anxiety caused by the presence or proximity of mares and other stallions.

Slow walking and jogging constitute the best exercise.

2. Regulation of service of the stallions is of vital importance. Opinions differ as to just what such regulations should be, but nearly all agree that many horses are misused in service. It is well to remember that the success of a given animal is not measured by the number of mares he serves, but by the number and character of the colts he gets in a given season. It has been determined by careful investigation that when the number of copulations during a given day is increased, the abundance of spermatozoa in the semen rapidly decreases, and if this service is pushed too far, the spermatozoa fail almost entirely, causing an interruption of the fertility of the animal. No definite number of mares can be assigned for a given horse, since the number that can be properly bred will depend upon their distribution through the season, the age of the horse, and his preparation and fitness for the work. The most conservative estimate is an average of one service per day the season through for a mature horse. However, the mares do not always come in regular order, distributed throughout the entire season, Hence, it sometimes becomes necessary to make two or three covers in a single day, and this may be done, occasionally, with no injury to the horse. It should not be repeated often, however, and under no circumstances on the subsequent day.

During the breeding season, careful attention should be given the cleanliness of the organs of reproduction. After each service the sheath and penis should be thoroughly washed with clean, warm water containing a little castile soap, and out of season, when the stallion is not actively engaged, these parts should be thus cleaned occasionally. Veterinary officers should see that proper care is exercised in carrying out this sanitary measure, as it may cause a docile animal to bite or kick if done in a rough manner.

3. Owing to the close relation which certain diseases of the male sexual organs bear to impotence and sterility, attention is directed to some of the more common pathological conditions which may be encountered in stallions. It is important to recognize these conditions early and to administer appropriate treatment or corrective measures before a disease process becomes well established.

(*a*) *Orchitis and epididymitis.*—Stallions in vigorous health during the prime of life are subject to congestion of the testicles. When there has been frequent copulation and heavy grain feeding with little exercise during warm weather, and when the proximity of other horses or mares excites the sexual instinct without gratification, this condition may develop into actual inflammation. Among other causes of orchitis are blows and penetrating wounds implicating the testicles, abrasion of the scrotum by a chain or rope passing inside the thigh, and sympathetic disturbances in cases of other organic diseases. Animals suffering from either of these affections should be removed from the environment of the breeding stables and withheld from service, during which time appropriate treatment should be administered. After recovery from such an attack, microscopic examination of the semen should be made before the stallion is permitted to resume his duty in the stud. Even after the spermatozoa are found to be vigorous, the number of services should be kept at a minimum until complete recovery is apparent.

(*b*) *Malignant tumors.*—When tumors of any kind involve the testicle to a marked degree, and thus impair the function, the gland should be promptly removed for general curative reasons. Such action is further indicated on account of the danger of the disease process extending to the other testicle, or other organs by metastasis in cases of malignant growth. Therefore, monorchids caused by surgical interference in the ablation of a malignant tumor should not be used for breeding, except under most unusual circumstances.

(*c*) Hydrocele, or dropsy of the scrotum, in which there is an accumulation of fluid in the scrotal sac between the two peritoneal layers, is supposed to exert an unfavorable influence upon the affected glands and tends to produce sterility. If the accumulation of fluid in the sac is accompanied by ascites, the systemic debility of the animal will probably determine sterility. When the affection is local, as is usually the case in the stallion, and depends upon a chronic inflammation of the scrotal peritoneum with the accumulation of the secreted fluids in the sac and involves but one organ, it may not induce complete sterility, but affect the formation of spermatozoa in the diseased testicle only.

The symptoms of hydrocele consist of a painless enlargement of the scrotum, appearing gradually and often without recognizable cause. The general health of the animal is not usually involved. The swelling is uniform and soft, suggestive of fluid. It is to be differentiated from tumors and orchitis by the firmness of the latter; it may be distinguished from hernia by rectal exploration, determining thereby the presence or absence of a segment of the bowel in the internal inguinal ring. Its diagnosis may be further established by introducing an exploratory trocar and withdrawing a portion of the contents.

The handling of hydrocele is not highly successful. Sometimes good results may be had by aspirating the fluid and injecting tincture of iodine or Lugol's solution into the cavity. When these measures fail, a radical cure of the local disease may be brought about by castration, the covered method being used. When the hydrocele is part of a general dropsy, there is usually no successful method of treatment.

(*d*) *Cryptorchidy.*—This congenital abnormality constitutes a uniform cause of sterility when both testicles are retained within the abdominal cavity. While the typical abdominal cryptorchid is sterile, the presence of the gland nevertheless induces a sexual reflex, causing the development of the ordinary male characteristics. If only one testicle is retained in the abdomen, the other being normally located and developed or even having undergone compensatorial hypertrophy, the animal may be fertile; that is, the normally developed gland is capable of performing its function regardless of the presence of the sterile gland within the abdomen. The condition is beyond practical remedy. While it is surgically possible to procure the descent of the testicle into the scrotum, and thereby cause the gland to so develop that it will perform its normal function, this would not prevent the transmission of the defect to the offspring.

(*e*) *Debilitating disease and overwork.*—Any constitutional disease which produces profound depression of the general system is usually accompanied by suspension of the powers of reproduction. Most serious constitutional disorders not only destroy the sexual desire for the time being, but also prevent the formation of spermatozoa, and thus lead to essential sterility during the period of the existence of the disease. In some acute fevers the sexual powers are not in complete abeyance and male animals affected with a disease accompanied by a high fever may be fertile. In chronic debilitating diseases there is sometimes seen a tendency to sterility, especially in the constitutional bone diseases, like osteoporosis, rickets, and in other chronic disorders, which depress the general vigor of the animal.

Overwork serves to inhibit the breeding functions, so that animals subjected to severe work are strongly inclined to be sterile for the time. In animals which are undergoing intensive training, as in stallions which are being prepared for the turf, there is usually a temporary sterility without any evidence of disease or degeneration of the glands. The resources of the animal are wholly consumed in the physical work which is demanded and there remains no reserve force to provide reproductive energy during this period.

(*f*) Starvation has a like effect upon the reproductive powers, so that any animal which does not receive sufficient food to maintain the general vigor of the system and afford a moderate reserve for reproductive energies tends to become sterile during the period of want. The remedies for these conditions are suggested by the causes; they are usually but temporary and run a parallel course to the causes themselves. Whenever these are removed or naturally cease, the reproductive powers become spontaneously restored.

(*g*) Idleness and overfeeding may cause impotence without any apparent change in the sexual organs. The stallion shows but slight sexual desire, or none at all in the presence of mares which are in estrum. At one time he may pay some attention to the mare, with more or less complete erection, and then desist in his attentions. When the next mare is presented, he may show normal sexual vigor.

IV. CARE OF THE MARE.

1. The impregnation of mares is more certain when they are in a healthy, vigorous condition. Extreme fatness is not conducive to easy parturition. On the other hand, thin or impoverished animals are usually difficult to impregnate. Anemia and debilitating diseases should be corrected prior to service. Mares conceive most readily about nine days after parturition, and after this time, evidence of estrum (heat) is generally observed about every 18 to 21 days until they become pregnant. These periods, however, may vary a great deal even with the same animal. Some mares fail to show conclusive signs of estrum even when tried regularly with a stallion. A receptive mood may often be induced by dilation and manual manipulation of the vagina and os uteri. Very often there is too much hurry to breed the mare and she is forced to take the service before she is just right or when she is in an overheated condition. If the weather is cold, it is well to give the mare gentle exercise before an attempt is made to breed her. When she is found to be in a satisfactory condition for the service, the vulva should be washed thoroughly with clean, warm water, the tail bandaged and the animal hobbled.

Much importance should be placed on seeing that the mare after her first service is returned to the stallion every 18 to 21 days to be tried and rebred if necessary. If the mare is accustomed to dry feed, she should not be turned on pasture soon after breeding, nor should she be required to do hard work or take excessive exercise immediately after service.

The cessation of estrum is a most significant, though not an infallible indication of conception. If the sexual excitement speedily subsides and the mare persistently refuses the stallion for a month, she is probably pregnant. In very exceptional cases, a mare will accept a second or third service several weeks after conception. The recurrence of estrum in the pregnant mare is most likely to take place in hot weather. If the estrual period merely persists an undue length of time after service, or if it reappears shortly after, in warm weather and in a comparatively idle mare, on good feeding, it is less significant, while the persistent absence of estrum under such conditions may be usually accepted as proof of conception. A change in the disposition after service of an irritable or vicious mare to gentleness and docility and a manifestation of laziness are excellent indications of pregnancy.

2. Below are enumerated some of the most common pathological conditions of the generative and adjacent organs to which mares are subject and which may cause sterility or make it unsafe

or unwise to breed them. Such animals should be eliminated for breeding purposes until the existing defects are corrected.

Nymphomania, due to cystic or other tumors of the ovary.
Fatty degeneration of the ovary in very fat, pampered mares.
Fatty degeneration of the Fallopian tubes.
Metritis and endometritis.
Complete constriction of the os uteri due to inflammation and induration.
Distortion or malformations of the pelvis.
Tumors of the genital tract.
Rectovaginal fistula.

V. PREGNANCY AND PARTURITION.

1. If it is not practicable to give pregnant mares regular daily work of a gentle character they should have free access to pasture during favorable weather. They will then be able to get ample exercise in the fresh air and obtain green grass, all of which are conducive to producing a healthy foal with easy parturition. Exercise is absolutely necessary for mares in foal, and in addition to having access to pasture they should have a roomy box stall. This will minimize the danger of becoming "cast" and prevent "stocked" legs and dropsical swelling of the udder and abdomen. The bedding should be kept clean and dry.

In feeding pregnant mares sound whole oats, bran, and mixed or timothy hay are preferable. Moldy hay or silage, damaged grain, woody, weathered fodder, dusty or rusty straw, or hay containing ergot may produce abortion. All feed which tends to cause indigestion should also be avoided. Pregnant mares should not have access to cornstalk fields. They should have an ample supply of pure, clean water. As foaling time approaches decrease the grain ration and keep the bowels active by feeding laxative feed, such as bran, flaxseed meal, etc.

2. The period of gestation in mares is usually a trifle over 11 calendar months, or 300 to 340 days. Parturition may not be completed at term and the foal may continue to be carried in the uterus for a number of months, to the serious or even fatal injury of the mare. The mere prolongation of gestation, however, does not necessarily entail the death of the foal. Prolonged retention of the fetus may be caused by an effective obstruction, such as lack of contractive power of the uterus, strong adhesions between the uterus and fetal membranes, abnormal presentation, contracted pelvis from fracture, or disease of the bones or induration of the os uteri.

3. Two or three days before parturition the mare should have access to a prepared box stall and small pasture lot free from other animals, where she can be observed until the foal is delivered. Box stalls 14 by 14 feet should be kept ready for the use of mares. They should not be permitted to foal in an ordinary stall or unprepared box stall. An absolutely clean foaling place is necessary and should be prepared as follows: Remove all loose litter and manure; cleanse and scrape the floor and sprinkle with slaked lime; scrub and cleanse the walls with a 3 per cent solution of liquor cresolis compositus or a 1 to 1,000 solution of corrosive sublimate and then apply freshly made lime whitewash, to each gallon of which has been added one-third of a pound of chloride of lime; cover the floor with fresh dry planing-mill shavings in preference to any other bedding material and remove the manure promptly.

As the time for parturition approaches, the udder becomes distended and a serous fluid oozes from the teats and forms as a yellow, waxlike mass around the orifices. About 24 hours before the birth this gives place to a whitish, milky liquid. Another symptom of approaching parturition is enlargement of the vulva and the escape of glairy mucus. The abdomen becomes more pendent, the flanks fall in, and the loins become depressed. Finally, the mare becomes uneasy, looks anxious, whisks her tail, and may lie down and rise again. In many mares this is not repeated, but the mare remains down; violent contractions of the abdominal muscles ensue; after two or three efforts the placental membranes appear and burst, followed by the forefeet of the foal, with the nose between the knees; and by a few more muscular contractions the fetus is expelled. The whole act may not occupy more than 5 or 10 minutes. This, together with the disposition of the mare to avoid observation, renders the act one that is rarely seen by the attendants. The umbilical cord is ruptured when the fetus falls to the ground or when the mare rises, if she has been down, and the placenta and membranes are expelled a few minutes later.

4. After delivery leave the mare alone for a time if she is lying down. After half an hour after the birth of the foal offer her a pailful of lukewarm water and again at intervals of two hours. Three

hours after parturition the mare may eat a mash of steamed oats and bran, if she has been accustomed to such feed; otherwise give her a small feed of her ordinary grain ration. In a day or two, if the weather is fine, the dam and foal may take some outdoor exercise, preferably in a small pasture lot away from other animals. In about 10 days or 2 weeks, she should have fully recovered and be taking her usual feed and grazing at pasture.

After the birth of the foal the external genitals, tail, and hind parts of the mare should be washed daily with a warm 2 per cent solution of liquor cresolis compositus until all discharge from the vulva ceases.

Prompt as is the normal parturition in the mare, difficult and delayed deliveries are surrounded by special dangers and require unusual precautions. By reason of the looser connection of the fetal membranes with the uterus as compared with those of ruminants, the powerful muscular contractions early detach these membranes throughout their whole extent and the foal dies at an early stage when parturition is unusually prolonged. Since the fetus rarely survives four hours after the onset of uterine contractions it becomes necessary to render assistance early in order to deliver a living foal.

5. It should be the practice to locate and examine the placenta immediately after birth in order to ascertain whether it has been expelled in its entirety. In the absence of a portion of it, further search should be made for the fragment before making an exploration of the uterus. Unless such an inspection is made promptly, the placental membranes may be carried away or mutilated by dogs or other animals, especially if parturition has taken place in pasture. After it has been thus inspected, it should be disposed of by either burning or deep burial.

While the retention of the total placenta is not frequent, yet, if neglected or delayed, infection takes place very quickly. Therefore the manual removal of a retained placenta should be undertaken promptly. In cases of dystocia the membranes should be removed as soon after delivery as possible, merely allowing a few minutes for the animal to recover from her exhaustion. At the same time the placenta should be closely examined and disposed of according to the instructions contained in the above paragraph.

In removing the placenta of the mare it is to be remembered that ordinarily the chorion comes away everted, but when it is removed artificially it should be done right side out. First, locate the margin of the rupture in the chorion through which the fetus has been expelled. Necessarily, this margin is detached for some distance from the torn border. Secure the torn border and carefully draw it out through the vulva. Insert the open hand or clenched fist between the chorion and uterine wall, and, while exerting enough traction upon the ruptured margin to keep the chorion tense, gently and cautiously push the hand along between the chorion and uterine wall. The process should be carried out almost equally around the entire circumference of the uterus and the chorion gradually detached until the cornu is reached and included.

In many cases of retention in the mare it is not actually needful to insert the hand into the uterus. If the protruding chorion be carefully grasped, folds of it picked up first here and then there, and gentle traction exerted upon each area by turn, it will soon be found that drawing upon a given part of the chorionic sac causes dehiscence of the placenta and distinct advance is made. Section after section is cautiously tested, and gradually the entire chorion comes away with the placental side outward. Under no circumstances should the placenta be delivered by forcible traction.

Fragmentary placental retention is in a way peculiar to the mare. It consists in the accidental transverse rupture of the chorion of the nongravid cornu, followed by the chorionic mass from the gravid cornu and uterine body coming away and leaving behind the small isolated fragment in the nongravid horn. This fragment is usually 8 to 12 inches in length and its lumen sufficiently large to admit of the insertion of a man's hand into its cavity. Once the fragment becomes separated; the narrow horn has little or no expulsive power and the mechanical assistance ordinarily afforded through the weight of the other portions of the chorion is wanting. Infection quickly follows. In two to five days the fragment becomes well decomposed, the abdomen is very tender upon pressure, the infection has spread throughout the uterus (purulent endometritis), extensive purulent collections have occurred in the uterine cavity, the uterine walls are thick, hard, and paretic, and parturient laminitis is present. These symptoms are characteristic of infection resulting from retention of the placenta or any part of it. The constitutional symptoms due to septic absorption frequently supervene and a valuable animal may be lost.

In cases of manual extraction, if the operator has not inserted his hand into the uterus, no further treatment is necessary. If there is known to be infection in the uterus or if the hand of the operator has entered, both the uterus and vagina should be well irrigated with boiled water. This may be repeated as required once or twice daily.

In the handling of malpresentations and the further treatment of the foregoing and other complications of labor, the procedures laid down in standard textbooks should be followed.

6. The importance of surgical cleanliness in all obstetrical operations can not be overestimated. The hand should never be introduced into the uterus or vagina without careful cleansing. The finger nails of operator and assistant should be first closely filed and fingers, hands, and arm scrubbed with brush, soap, and water. After removing the soap with plain water the hands and arms should be immersed in alcohol. The operator should wear a gown. If it is impracticable to use rubber gloves, much care should be taken to locate all scratches or skin abrasions on the hand and arms of the operator and assistant and seal them with collodium in order to avoid infection.

VI. CARE OF THE FOAL.

1. When the foal is born and has been cared for and the placenta has been delivered, remove the mare and foal to the second box stall prepared as was the first. Then prepare the stall just used for the reception of the next mare. The mare must always occupy a clean, specially prepared box stall, and it should be perfectly ventilated and as sunny as possible.

Where but one box stall is available, clean it out, burn the placenta and soiled bedding, use a disinfecting solution freely on the floor, and put in plenty of dry, clean shavings as soon as possible after the birth of the foal.

2. While umbilical infection is not so apt to occur when the foal is delivered on grass, it is nevertheless quite possible. Therefore the umbilical cord should always be treated at the earliest moment. It should be cleansed with boiled water and given a thorough painting with tincture of iodine, followed by a liberal dusting with a desiccating, antiseptic powder. A very satisfactory powder consists of equal parts of boric acid, oxide of zinc, and starch, all finely powdered and mixed. In the treatment of the umbilical cord the attending veterinarian should first thoroughly cleanse and disinfect his hands as above described.

In case the cord is not ruptured, it should be scarified and torn in two under antiseptic precautions at a distance of about 2 or 3 inches from the umbilicus, after which, with the thumb and finger, press from the stump the Whartonian gelatine and fluids. After this has been carefully done, the stump should be dusted freely and repeatedly until the remnant of the cord has become completely desiccated and the navel hermetically sealed. If the application is repeated, three or four times at intervals of one-half hour, the stump of the cord will be well mummified within two to four hours and the danger from infection eliminated. The umbilical cord need not be ligated, since the ligature may firmly inclose the gelatine, thereby retarding the prompt desiccation of the stump.

A large percentage of the cases of umbilical infection occur during the first three weeks of life. Fat, flabby foals, with thick umbilical cords—often the get of overfed, pampered, underexercised stallions, or from mares in like condition—are especially prone to the disease and are most likely to succumb. Foals which have small cords and are lively at birth are usually on their feet trying to nurse in less than an hour. Such foals need no help, but weak ones will have to be held up to suckle for the first time.

3. Keeping the udder of the mare clean by daily antiseptic washing tends to prevent the foal from scouring, for that condition often is due to bacterial infection of the intestinal tract by way of the mouth. Antiseptic treatment of the umbilical stump also tends to prevent scouring. At birth, the intestine of the foal contains a sticky mass of fecal matter. This should come away promptly and usually this is accomplished by the colostrum, which possesses purgative properties. To assist nature, either insert a small soap pessary in the foal's rectum, or within an hour from birth give an injection of not to exceed 4 ounces of warm soapy water and repeat in 12 hours if required. A fountain syringe is to be preferred with a small hard rubber nozzle or a small clean rubber tube and funnel. Smear vaseline or lard on the nozzle and in the rectum before giving the injection. If the bowels do not move within 24 hours from birth, shake up 2 to 4 tablespoonfuls of pure castor oil in milk or an equal quantity of sweet oil, according to size of foal, and give as one dose. Then continue the injections at intervals of six hours, if necessary.

4. *Artificial feeding.*—In case the mare dies or has no milk, the foal may be raised on cow's milk. Choose the milk of a cow that has recently calved, preferably one which gives milk low in butterfat, for mare's milk, while rich in sugar, is poor in fat. The milk may be modified as follows and the strength gradually increased:

Cow's milk	ounces	10
Lime water	do	1
Sterile warm water	do	5
Milk or cane sugar	drams	2

For the first few days of the foal's life it should be fed from a nursing bottle small quantities of the above mixture at frequent intervals. If possible, begin with 6 to 8 ounces every two to four hours and slowly increase the quantity and strength of the milk and lengthen the intervals between feeding. The bottle and nipple should be kept scrupulously clean by boiling in water to which has been added about 1 teaspoonful of sodium bicarbonate to each quart and afterwards rinsed with clean water. In a few days, food may be given six times a day, and later four times daily. The foal should be taught early to drink from a pail by first allowing it to suck the attendant's fingers as they are gradually submerged in the milk.

Until the bowels move freely, give rectal injections as described above. If the foal scours at any time, give 2 to 4 tablespoonfuls of a mixture of equal parts of sweet oil and pure castor oil shaken up in milk and stop feeding milk for two or three meals, allowing sweetened warm water and lime water instead. Let the foal lick oatmeal as soon as it will eat and gradually increase the amount and add wheat bran. In four or five weeks whole milk may replace the modified mixture and the amount gradually increased until, at about 3 months of age, it may be given freely three times a day. The foal at this age also should be eating freely of grass, grain, and bran.

At all times supply pure cold drinking water. Let the foal run in a grass paddock for exercise. Accustom it to being handled daily. Feed small quantities of nutritious food often, keeping all food vessels clean, and the foal should thrive.

5. *Weaning.*—One of the most critical times of a colt's life is at weaning. Usually they are weaned when about five or six months of age. It is undoubtedly better for the colt to be fed through its mother as long as possible, but if the dam is again in foal, she should not be allowed to suckle the colt longer than six months, in order that she may be better able to furnish ample nourishment to the unborn foal. If the colt has access to plenty of grain, grass, and roughage, it will not be seriously set back. When taken away from its mother, if possible it should be placed with another colt of about the same age in a secure inclosure where they can not become injured. Feeding grain is not absolutely necessary if the colt is on good grass and has become accustomed to it. When the colt is weaned, it is important to give careful attention to the udder of the dam, since it will become "caked" (mammitis) if not relieved of the milk. For the first four or five days, a good portion of the milk should be drawn by hand at least twice daily, after which this practice may be gradually decreased, until the milk ceases to flow.

6. The textbook by Dr. W. L. Williams, entitled "Veterinary Obstetrics," has been consulted freely in the preparation of this matter and more detailed information will be found therein.

VII. ARTIFICIAL IMPREGNATION.

1. Artificial impregnation may be defined as the impregnation of an animal by means other than copulation. This is accomplished by the introduction of seminal fluid into the uterus of a mare by artificial methods—so-called artificial insemination. The semen may be transferred from the vagina to the uterine cavity of the mare which the stallion has served or it may be transferred from this mare to the uterine cavities of other mares which it it proposed to impregnate. Artificial impregnation has been experimented with quite extensively amongst breeders for more than 20 years and the results seem encouraging. The procedure does not appear to have received as yet the attention which it merits from scientific veterinarians and much remains to be accomplished in the selection of methods, the improvement of appliances, and the development of technique. For this reason little is attempted in this discussion beyond enunciating the general principles of the procedure and describing the methods which have thus far yielded a reasonable degree of success. It is felt that the work has a promising future and that it will be placed on a desirable scientific plane only as a result of the careful and conscientious investigations of qualified veterinarians rather than by following the imperfect methods of laymen who seem to have been the real pioneers.

Consequently, no hard and fast procedure is laid down, and it is desired rather that a technique be developed in accordance with the principles and suggestions herein. The bulletins of the agricultural experiment stations of Oklahoma, Montana, and Utah outline the present status of this work in a fairly satisfactory manner and have been largely drawn upon.

2. Impregnation by artificial methods possesses certain apparent advantages over natural service. When it is practiced, the usefulness of valuable stallions can be increased manyfold, since from one to a dozen mares can be bred from a single service. Instead of requiring two or three services a day from a stallion, he need be used only once. By less frequent service, the vitality of the stallion remains higher, the fertilizing power of the semen is increased, and higher percentage of vigorous foals is the result.

After a long series of experiments with stallions Doctor Lewis, of the Oklahoma Experiment Station, found that the number and vitality of the spermatozoa decreased rapidly when stallions were required to give frequent and continuous service. This is probably one of the reasons why some animals are poor breeders and sires of poorly developed foals.

The shipping of semen long distances with a view to its use in impregnating mares, days or weeks after its emission, likewise has little to recommend it, considering the fact that under unnatural conditions the life of the spermatozoa does not extend over a few hours and that their vitality disappears promptly.

Indications.—(*a*) To secure service to a larger number of mares than the stallion is able to cover under natural conditions:

(*b*) To breed mares not in heat when breeding at such times is desirable or necessary. It has been claimed that mares can be so bred successfully. There is no evidence to show that the spermatozoa will exist indefinitely in the female generative organs awaiting an ovum to fertilize. Nevertheless, the possibility of their vitality being considerably protracted can not be ignored.

(*c*) To breed mares in which there may exist the possibility of communicable disease, such as glanders, dourine, etc., for the purpose of avoiding infection of the stallion.

(*d*) In the existence of physical defects of the generative organs, such as occlusion of the cervical canal, deformities of the os uteri, diseases of the vagina, etc., which may inhibit the activities of the spermatozoa or interfere with their entrance into the the uterine cavity or of such conditions as rectovaginal fistulæ and ruptured perineum rendering copulation difficult or impossible.

(*e*) In cases of marked disproportion between the size of the stallion and mare to such degree that copulation may be dangerous to either one. An abnormally large penis may inflict very severe injury on the mare.

(*f*) In cases of deformities of the penis of the stallion whereby the semen is deposited in the vagina or elsewhere rather than the uterus.

(*g*) Shy breeding mares may sometimes be impregnated in no other way.

3. *Operative procedures and appliances in common use.*—During service, a normal stallion will discharge six or eight ounces of semen either into the vagina, or, in a large percentage of cases, directly into the uterus of the mare, which may be collected and transferred to the uterus of the same or another mare by several methods.

When the mare is the same as the one served (there existing some reasons why the semen fails to reach the uterine cavity), it may be conveyed directly by means of some type of extractor or syringe from the vagina into the uterus, the os having previously been dilated. Even the fingers of the operator will ordinarily convey sufficient spermatozoa when introduced in the operation of dilation.

When additional mares are to be impregnated or when the semen is ejaculated elsewhere than into the vagina, the procedure in use may be divided into two stages:

(*a*) The collection of the semen.

(*b*) Its introduction into the uterine cavities of one or more mares.

Stage (*a*).—The semen may be collected by means of a breeding bag from the penis of the male or from the vagina or uterus by use of an extractor. After collection, it must be protected from all deleterious agents until it is used.

Breeding bags, which fit over the penis of the male during the time of service, have been used for collecting semen. It is stated that valuable stallions have been ruined for breeding purposes by their use. Some sires do not object to them nor does their use appear to have any serious effect on their service afterward, when the bag is not used. As a rule, it is not advisable to use them since they induce viciousness in some stallions owing to the annoyance which they cause. The use of the semen extractor seems to have taken the place of the bag and removes all danger of serious results. When the bag is used, it should be removed as soon as the stallion dismounts, corked and placed in a water-bath maintained at a temperature of 95° to 100° F until wanted for use. Semen collected in a breeding bag possesses the advantage of never having been exposed to infection in a mare, which is not true of that collected from vagina or uterus. This would appear to be an important point in favor or using the bag.

For the collection of semen from the vagina or uterus, various types of extractors have been designed. All are constructed on the principle of a syringe of either piston or bulb type with long, flexible, or curved tip. The piston syringe has been issued to some of the remount depots. The type, with the glass exposed at the tip, is preferable, as one can observe when the extractor is filled. This instrument is claimed to be more suitable for use in the vagina than in the uterus. The bulb pattern of extractor seems to be the most satisfactory and promising in future results. It consists practically of a long, flexible tube with protected tip and large lumen. To the opposite end is screwed a removable rubber bulb holding about 6 to 8 ounces.

The tip is introduced into the semen in the vagina or uterus, the bulb compressed, the semen withdrawn, and the bulb unscrewed and placed upright in the water bath. Capsules may be filled direct from the bulb or bag. If several extractors are available, so that a sterilized one can be used for impregnating each animal without delay, the semen may be emptied into a wide-mouth amber-colored bottle previously brought to the required temperature. There will then be no difficulty in withdrawing the semen into the bulb for an injection.

The maintenance of the semen from deleterious influences until it can be used is a most essential part of the procedure. The conditions which have been found to be destructive to spermatozoa are direct sunlight; contact with containers, instruments, air, or water of a temperature above 100° or below 95°; soap, vaseline, grease, oil, chemicals, urine; and contact for any great length of time with rubber. The semen should be so handled as to avoid these conditions. Water should not be allowed to mix with it. The tip of the extractor should be protected by the fingers until the bulb has been removed and the opening of the bulb should be corked. In removing semen from the bulb to fill capsules, all such exposure must be avoided and the work done hastily; in fact, the more rapidly the whole operation is completed, the more satisfactory the results are likely to be. The interior of extractors, bags, etc., must be scrupulously clean. Soap, vaseline, or other greasy lubricants should not be used on instruments or hands.

The greatest difficulty consists in the maintenance of the semen at a proper temperature after its collection. At no time should it be exposed to a temperature below 95° or above 100°. The instruments after sterilization and when not in use and containers must likewise be kept at this temperature. A hot water bath should be provided for this purpose.

A simple device which may be improvised, consists of a metal container 30 inches long, 5 inches wide, and 6 inches deep. A cover is desirable. A packing box large enough to hold this container has a 4-inch hole bored in each end of the bottom. Two lamps are placed underneath the packing box and the heat, applied through the holes to the water in the container, is sufficient to retain the required temperature as long as necessary. The water should first be boiled in the container over a fire and, if necessary, cooled by the addition of cold-boiled water. In every case, a floating dairy therometer should be used and the temperature carefully observed in order that it may be constantly maintained between 95° F. and 100° F.

Stage (*b*).—Introduction of the semen into the uterine cavities of one or more mares. The method commonly adopted is that of using breeding capsules. Gelatine capsules of one-fourth ounce capacity are filled with semen from the bulb and inserted into the cervix of the uterus. Capsules should be kept in a clean, dry place in the original container and promiscuous handling avoided. Only those required for immediate use should be taken out and kept wrapped in a sterile towel. The covers should be removed just before filling and promptly replaced and the capsule at once inserted. It will melt rapidly in the cervix and its presence is claimed to produce no ill effect. Sterilization of capsules is inadvisable.

If impregnation is to be accomplished by means of an extractor introduced into the uterine cavity, precautions must be taken that the extractor is cleansed and sterilized by boiling after being used on one animal and before use with another. If several extractors are at hand, each can be loaded from the same reservoir of semen. Likewise, the delay in sterilizing the extractor for each case will endanger the viability of the spermatozoa. Consequently, when impregnation of more than two animals is contemplated at a single service, the capsule method above described would appear preferable in the absence of more than one extractor.

The use of a capsule to collect semen by scooping it up from the vagina and transferring the capsule to the uterus of another animal without the intervention of an extractor, while permissible in an emergency, is not recomended as a routine procedure.

Artificial breeding should be conducted in a place free from dust and wind and where the direct rays of the sun can be avoided. Better results have been secured in warm weather, probably because of the acknowledged fatal effect of cold on the spermatozoa. The necessary appliances should be arranged in a warmed room adjacent to the breeding place, and all handling of the semen, filling of capsules, etc., should be done in this room. The semen as soon as collected should be carried there and removed only in the capsules or extractor for the purpose of impregnating an animal. Vigorous spermatozoa are essential to success, hence the importance of all precautions to preserve their vitality.

If civilian animals not declared free from communicable disease are to be impregnated, it will be necessary to carry the filled capsules or extractors (inseminators) from the water bath to the place where such animals are isolated. The containers should be wrapped in warm sterile towels to avoid exposure to sunlight or cold and the operation of insemination should be completed as expeditously as possible.

4. *Cleanliness* —Strict surgical cleanliness of the hands and arms of the operator and his assistant and of all instruments and containers is absolutely necessary to successful results. Hands and arms should be sterlized as described in paragraph 6 of Section V. Operator and assistants should wear sterilized gowns. All instruments and containers should be sterilized by boiling exactly as for any surgical operation. Vaseline or other lubricants should not be used. After the hands or instruments have been introduced into the vagina of an animal, they are infected and should receive the same careful cleansing before another animal is operated on as they were given in the first place. Instruments and containers when not in use should be laid on sterile towels and should not be allowed to come in contact with anything not sterilized.

5. *Preparation of the patients.*—All mares should be given a physical examination before breeding. Before natural service or artificial impregnation, each animal should be hobbled for the protection of the operator and of the stallion. A bandage on the tail removes any inconvenience from long hairs getting in the way. The os uteri should be dilated by careful manual manipulation and the mare bred promptly thereafter, as contraction of the os may recur in a very short time. The principal benefit derived from this operation is in removing the toughened plug of mucous which sometimes accumulates in the cervix. The opening should never be made larger than necessary to admit a capsule or one finger. All the animals to be bred at one time should be assembled and prepared preliminary to the service in order that there may be no unnecessary delay in handling the semen. After the mares have been conveniently arranged, have the stallion serve one which is gentle and known to be free from communicable disease.

6. *Technique.*—As soon as the stallion has dismounted, the following technique may be followed: The operator takes the semen extractor from the warm water bath, squeezes all the water from the bulb, and proceeds to collect the semen. The extractor is held in the right hand and the left is introduced into the vagina, where the semen may be found. By depressing the vaginal floor with the fingers, a pool is created into which the tip of the extractor is introduced, guided by the left hand. Should the semen have been deposited in the uterine cavity, it becomes necessary to advance the hand and, guided by a finger in the cervix, carry the point of the extractor to the pool of semen. By relaxing the pressure of the right hand the semen is drawn into the bulb. Care should be taken that the tip of the instrument is immersed in the semen and that the delicate endometrium is not torn by being drawn into the extractor.

When a sufficient quantity of the semen has been obtained, the bulb is unscrewed, corked, and placed in the water bath. The semen is then poured from the bulb into the breeding capsule until it is half full. The top of the capsule is replaced and capsule and contents are inserted directly into the uterus of a mare through the dilated cervix. The process is continued until all mares have been bred. It is necessary to do the work quickly because the capsule soon melts and, besides, the semen should be placed in the uterus as soon as possible after its emission.

As already pointed out, with the assistance of additional extractors, the use of the capsule is unnecessary, an extractor being used to inject the semen directly into the uterus. After the required quantity has been drawn into the bulb from the container, the extractor, now used as an inseminator, is introduced in the same manner as for removing semen. About two inches should enter the uterine cavity. An excess of air should not be injected.

The mare should be permitted no violent exercise following impregnation.

(*Cir. Letter No. 37, Veterinary Division, Surgeon General's Office, May 7, 1919.*)

Weekly Telegraphic Report on Public Animals.

1. The weekly telegraphic report on public animals heretofore rendered by the veterinarians of certain specified stations will, beginning July 1, 1919, be submitted by the veterinarian of every camp, auxiliary remount depot, remount depot, post, detached command, or station within the continental limits of the United States at which there are public animals. This is intended to be a station rather than an organization report and will include all the animals at or assigned to the organizations of the station except that for the present a separate report will be furnished by the veterinarian of an auxiliary remount depot at camp.

(*a*) The purpose of this report is to supply prompt and accurate information regarding all the animals of the Army without duplication.

2. The report will always have the following form and this phraseology will be carefully followed to avoid unnecessary words:

CAMP BLANK, TEX., *July 4, 1919.*

SURGEON GENERAL,
Veterinary Division, Washington, D. C.

Total strength three one four nine comma sick five one seven comma communicable disease four two eight comma deaths fifteen.

BROWN.

(*a*) It will be sent whether animals are on hand or not. If there are no animals, the telegram should read: "Total strength zero."

(*b*) Likewise, if there are no sick, no communicable disease, or no deaths to report, the proper phrase will be followed by the word "zero."

(*c*) See Circular Letter No. 31, Section VIII, paragraph 1*a*, for a list of the reportable communicable diseases.

(*d*) The number of deaths should be the total deaths from all causes whatsoever, but whenever any animals are destroyed for glanders, the information will be added as "destroyed for glanders one," it being understood that the number so destroyed is included in the total deaths.

(*e*) A separate notation is desired for animals dying in transit. Whenever a shipment is received in which animals have died during the trip, the veterinarian of the Receiving Station will add to the next weekly telegraphic report the words "deaths in shipment from (1) .... comma (2) ...." Blank space (1) is to be filled in with the name of the place from which the animals were shipped and space (2) with the number of deaths in words. These deaths are likewise to be included in the total of deaths.

3. This report will be sent at noon of each Friday. It is contemplated to show the total number of animals on hand, the total number sick, and the total number with communicable disease at that hour, but to show the total number of deaths for the preceding seven days. Animals actually present and on sick report should be counted. Those which have been transferred sick to a hospital in an auxiliary remount depot or at another station should be included in the report from the place where the animals actually are present.

(*a*) Animals of the command absent temporarily will be reported on by the veterinarian of the detached command of which they form a part when there is one, otherwise they will be included in the report of the veterinarian of the station.

4. Circular Letter No. 10; Circular Letter No. 16, paragraph 5; Circular Letter No. 18, Section IV; and Circular Letter No. 25, Section III, are rescinded, effective July 1, 1919.

(*Cir. Letter No. 38, Veterinary Division, Surgeon General's Office, June 10, 1919.*)

Miscellaneous Information.

I. CIRCULAR LETTERS.

1. Circular letters from the Veterinary Division, Office of the Surgeon General, are essential to the veterinarian in the performance of his official duties. In the Veterinary Corps these circular letters have the weight of any other instructions from higher authority and are to be obeyed accordingly. They should be carefully filed for ready reference since it frequently occurs that a letter of more recent date changes or supersedes an earlier one. In such case the latest instructions received should govern. General veterinary inspectors are expected to report on the care shown in filing these letters and the degree of familiarity with their contents evidenced by veterinarians and their assistants.

2. All circular letters are for general distribution unless so marked. A complete file of those in force will be furnished to department surgeons, veterinary inspectors, and, with the exception

of those marked for special distribution, to the veterinarian of every camp, depot, post, or other station. The file pertains to the permanent records of the station and will not be removed therefrom by any person. On the abandonment or closing of a station instructions should be requested from this office for its disposition. The receipt of a circular letter must always be acknowledged.

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II. BLANK FORMS, M D.

1. Blank forms of the Medical Department are not furnished by the Office of the Director of Purchase, Storage, and Traffic through the local supply officer. They will be obtained through Medical Department channels under the provisions of paragraph 961, M. M. D.

III. INFORMATION TO ACCOMPANY BLOOD SPECIMENS FROM GLANDERS SUSPECTS SENT TO LABORATORY.

1. Whenever a specimen from a suspicious reactor to a mallein test is sent to the laboratory for serological examination, it will be accompanied by a letter giving the following information or such part thereof as is a matter of actual record:

(*a*) Kind of animal.
(*b*) Hoof number, name of organization, or other number or mark serving positively to identify the animal.
(*c*) Dates of previous mallein tests.
(*d*) Kind of test.
(*e*) Nature of the reaction in each case.
(*f*) Dates of previous serological examinations, if any.
(*g*) Nature of the reaction reported in each case.

2. This information to be of value must be accurate and not a matter of guesswork. There must be absolutely no doubt as to the identity of the animal. However, in the absence of the exact date of previous testing, an approximate date may be given, but it should be stated as approximate.

(*a*) See Circular Letter No. 24, paragraph 2 (revised April 15, 1919), for the markings to be placed on the tube containing the specimen.

3. Hereafter all serological glanders tests will be reported by the laboratory as "positive," "negative," or "suspicious," without qualifying or other words. It is not deemed advisable or necessary to furnish the laboratory with any clinical data, but it is essential that it be placed in possession of the information called for in paragraph 1, in order to correctly interpret the test.

IV. GLANDERS AUTOPSIES; PATHOLOGICAL LESIONS FOUND POSTMORTEM TO BE SENT TO LABORATORY.

1. The third sentence of paragraph 2, Section IX, of Circular Letter No. 32, on glanders autopsies is replaced by the following: When an animal is destroyed for glanders, specimens of the organs containing any lesions found at autopsy, irrespective of whether such lesions are considered positive, negative, or suspicious, will be sent to the laboratory for examination. The letter accompanying the specimen (see par. 8, C. L. No. 24) will include all the data required by paragraph 1 of the preceding section. Attention is directed to paragraph 54, S. R. No. 70, C. No. 1, the seventh sentence of which positively requires an autopsy on all animals which failed to show physical signs of glanders before death.

V. VETERINARY SERVICE IN COMMANDS UNDER DEPARTMENT COMMANDERS.

1. The veterinary service of all organizations or stations within the territorial limits of a department which by existing orders are placed under the control of a department commander is under the same general supervision of the department surgeon as the sanitary service. When practicable, a veterinary officer is detailed as assistant to a department surgeon to perform duties similar to those of a department veterinarian.

2. The veterinarian of a command under the jurisdiction of a department commander will forward through the department surgeon all communications and reports which would be sent direct to this office in case the command were not under the control of the department commander. (See sec. 6, G. O. 23, 1918.) This applies to Forms 101, 102, 111, and 47a, M. D. The personal report of each such veterinary officer will be sent to the department surgeon and also direct to the Surgeon General. Sanitary reports, Form 110, and other papers required to pass through military

channels are forwarded through the commanding officer. The weekly report of activities of veterinary officers at department laboratories and of the officer in charge of the veterinary laboratory at Philadelphia will continue to be sent, as at present, direct to the Surgeon General.

3. Section V, Circular Letter No 27, and Section III, Circular Letter No. 31, are hereby rescinded.

(*Cir. Letter No. 39, Veterinary Division, Surgeon General's Office, June 12, 1919.*)

Instructions for Veterinary Meat and Dairy Inspections.

I. SANITATION.

1. The officer responsible for veterinary meat and dairy inspection investigates sanitary conditions in connection with the slaughter of food-producing animals and the dressing, preparation, processing, curing, manufacturing, or otherwise handling, shipping, and storing of meats and meat products and with dairies and milk herds. The general inspection requirements, the methods of procedure in correcting defects, and the reports required are set forth in Circular Letter No. 34, V. D., S. G. O. The sanitation of dairies and milk herds will be found in Section V of this letter.

2. The purpose of this section is to indicate the principal defects to be looked for and corrected in the construction, equipment, and operation of abattoirs, packing houses, manufacturing establishments, butcher shops, markets, refrigerators, and storage places of every kind in which meats or meat products are manufactured or handled. Initial inspection reports should give a concise description of the establishment and its equipment, accompanied, when practicable, by a sketch; subsequent reports make note of changes only. Examination should be made of:

3. *Premises.*—Suitability of location and surroundings.

(*a*) Cleanliness, drainage, and freedom from nuisances such as open sewers, vaults, feeding of swill, tankage, or offal.

4. *Receiving facilities.*—Adequacy, suitability, cleanliness, water supply, drainage, of pens, corrals, isolation corrals, sheds, runways, and unloading chutes.

5. *Interior construction of building.*—Suitability of construction, facilities for cleaning and state of repair of floors, walls, ceilings, windows, doors, partitions, posts, in all rooms or compartments, receiving and loading docks, etc. Floors of slaughter, preparation, and processing rooms should be of impermeable material, easily cleaned, provided with gutters and drainpipes properly trapped to the sewer; zinc and lead paint is preferable to whitewash for use on walls.

(*a*) Suitability of arrangement and adequacy of rooms and compartments for the purpose used.

6. *Ventilation.*—System and efficiency of ventilation of all rooms and compartments.

(*a*) Freedom of rooms or compartments used for slaughter or for preparing or storing edible products from odors from toilet rooms, basins, hide cellars, casing rooms, inedible tank, fertilizer rooms, stables, etc. Proper ventilation is indicated by dry walls and ceilings and the absence of odors.

7. *Lighting.*—System and adequacy of lighting, both artificial and natural.

8. *Water supply, ice, plumbing.*—Source, quality, quantity, distribution of water supply.

(*a*) *Source and quality of ice.*—If ice is produced on the premises, examine source of the water and methods of manufacture and handling. Is water stored in open tanks on roof or elsewhere subject to contamination from birds or other sources?

(*b*) Suitability and condition of plumbing fixtures.

9. *Equipment and utensils.*—Adequacy, suitability, and repair of equipment and utensils such as racks, hooks, receptacles, trucks, tables, benches, cutting blocks, etc., used in any part of the establishment; these should be of metal or hardwood and free from cracks and like defects.

(*a*) Investigate carefully such equipment as scalding vat, scraping machine, viscera chutes, vats and other facilities for washing, drying, trimming carcasses, and for plumping and chilling poultry, pickle vats, boxes, churns, etc.

(*b*) Note kind of thermometer used in recording cooking temperature; temperature used in rendering edible fats; facilities for "sliming" of sausage casings; steam or gas jet provided for cleaning hog snouts, eyes, ears, etc. The use of hog bellies on the plungers of sausage-stuffing machines is not approved.

10. *Cleanliness and disinfection.*—Facilities and methods of cleaning and cleanliness of every part of the building and the equipment and utensils therein. Is there a thorough cleaning at the end of each day's work? Hides, horns, hoofs, scraps of meat, etc., should not be allowed to collect

on the floor, but kept in proper container; sawdust used on floors must be clean and frequently renewed.

(*a*) The cleanliness of containers, chutes, of grinding, cutting and other machines, and of vats, including the water used therein, should receive attention.

(*b*) Adequacy of the arrangements for disinfecting tables or other equipment, floors, hides, etc., with steam, boiling water, or other agencies.

11. *Contamination by rejected carcasses or parts.*—Facilities for avoiding contamination of edible products by rejected carcasses or parts during any part of slaughter, handling, or storage; separation of compartments used for slaughter, handling, or storing edible products from those used for living rooms and from other compartments used for inedible products or for rejected parts.

(*a*) Are compartments provided for slaughter of poultry and small stock separate from sales or storage places?

(*b*) Are containers for edible and inedible organs marked for purpose of identification? Uninspected or rejected meats or meat products should not be mixed or worked in the same machines with passed meats nor otherwise handled or stored in the same rooms where contact and intermingling are possible.

12. *Disposal of Products; Tanks.*—Facilities for the disposal of waste matter, blood, offal, refuse, hides, feathers, bristles, bones, etc., and the use of such facilities.

(*a*) System of denaturing or otherwise disposing of rejected carcasses and parts. Animals wholly rejected on ante-mortem inspection and dead animals rejected should not be brought into establishment but may be taken into tank room by outside hoist.

(*b*) System of handling rejected products which have been returned.

(*c*) Method of operation of tanks and disposition of tankage.

13. *Dressing Rooms, Toilets, etc.*—Adequacy and suitability of dressing rooms, toilet rooms, urinals, and lavatories; their location in relation to rooms used for edible products.

(*a*) Adequacy and convenience of supply of hot and cold water, soap and towels.

14. *Employes.*—Number, suitability of dress, cleanliness of hands and person, appearance as to health of employees. Are cuspidors accesible and is their use enforced?

(*a*) Skewers and knives should not be held in mouths of butchers; steels should not be stuck into boots; removal of dew claws with the teeth is improper.

(*b*) Are regulations published and enforced regarding washing hands after using toilets, urinating, or expectorating on floors, treatment of wounds of hands, and like sanitary requirements.

15. *Rodents, Vermin.*—Freedom from rats, mice, flies, and other vermin and methods used to exclude same. The use of poison for their destruction should not be allowed. Are apertures screened?

(*a*) Are dogs and cats admitted to compartments used for slaughter or for preparing or storing edible products? Dogs used for rat extermination should be free from tapeworm infestation.

(*b*) Are counter meats in markets protected from flies and handling? Outside displays are unsanitary.

16. *Source, nature, and prior inspection* of all meats and meat products handled and of all other materials, including dyes, coloring matters, and flavoring substances entering into their preparation for food purposes; inks used for stamping must be of approved ingredients.

17. *Refrigeration.*—System and efficiency of refrigeration used in all refrigerators, coolers, cold-storage rooms, refrigerating cars, and refrigerator rooms on ships. In cold-storage rooms particular attention should be given the construction of doors and windows, insulation and drainage, air circulation in connection with ventilation, and cleanliness and state of repair of racks, rails, hooks, refrigerating coils, ceilings, walls, floors, and drains.

(*a*) Temperature maintained in different compartments and at different periods in chilling and cooling; type, location, and accuracy of thermometer. The average temperature of a cold-storage room should be taken about 4 feet from the floor, using a standard registered thermometer.

(*b*) *System and adequacy of ventilation.*—It is not a good practice to permit outside air direct entrance into a cold-storage room during summer months as it will elevate the temperature and encourage the deposition of moisture. It is also an unscientific method of ventilation.

Air, before it is introduced into a cold-storage room, if possible should be cooled 5° or 6° F. below the temperature maintained in such room. This will render the incoming air as dry as that in the cold-storage room, and is one of the essential features of good ventilation.

(*c*) *Degree of moisture.*—A psychrometer may be used in taking humidity measurements. The interrelation between ventilation, humidity, and impurities in cold-storage rooms is very close.

Impurities in the form of gases emanate from stored products and tend to become absorbed in collected moisture. Collected moisture favors the growth of mold and products become slimy more quickly if stored in a refrigerating room not containing means for the elimination of moisture. Humidity may be controlled if proper means are provided. Absorbents, ventilation, and air circulation are all useful for this purpose.

Moisture may be absorbed through free circulation, whereby the moist air continually comes into contact with the refrigerating pipes; or by the use of an absorbent, such as calcium chloride (chloride of lime, not chlorinated lime).

(*d*) *System and adequacy of air circulation in cold-storage rooms.*—A penetrating but fairly strong circulation of air is absolutely necessary in cold-storage rooms because it is a part of the process which purifies the air. The air is purified to a large extent in proportion to the thoroughness with which it circulates and is brought into contact with the means of absorbing moisture.

With a positive and well-distributed circulation of air by mechanical means, a storeroom may be maintained at a humidity which would be dangerous if only a sluggish gravity circulation of air were in operation. A brisk movement of air in all parts of the room equally removes the moisture and impurities from the vicinity of goods, and carries them to the cooling coils, there to be for the most part condensed or frozen on the pipe surfaces. Therefore, the proper circulation of air in a refrigerator or cooler is just as important as ventilation.

18. *Handling, packing, and transporting.*—System of handling, packing, crating, storing, and transporting products.

(*a*) Separate elevators for edible and inedible products.

(*b*) Length of time between storing and shipment and amount of spoilage.

(*c*) Suitability, cleanliness, and equipment of cars and other vehicles used for transportation; vehicles should have suitable hangers and clean floors; facilities should be supplied for protecting products from contamination from the floors, sides, and tops of such vehicles; same vehicles should not be used for hauling inedible or rejected products or other articles liable to contaminate food.

19. *Storing.*—Number, suitability, condition as to temperature and dryness, ventilation, adequacy, and equipment of all rooms or buildings used for storage purposes.

(*a*) Are fish, limburger, or other malodorous products or uninspected meats stored in coolers or refrigerators with other products? Conditions surrounding fresh products in storage are considered in greater detail in Section IV, Subsection B, paragraph 4.

20. *Other sanitary inspection agencies.*—Is the sanitation of the establishment supervised by a representative of the Bureau of Animal Industry or other official agency? Remark on the nature and sufficiency of the regulations under which this inspection is maintained.

II. ANTE-MORTEM INSPECTION.

1. *Definition and object.*—The ante-mortem inspection consists of the examination of animals intended for food purposes before their slaughter. In case of live animals bought on the hoof in the field and intended for early slaughter it may include the inspection at purchase with such later examinations as may be required. From the standpoint of abattoir inspection, it also includes the inspection of animals which have died in cars or pens, and "yard" inspection.

2. Its principal purpose is to aid in detecting communicable diseases, thereby facilitating isolation and the proper disposal of diseased animals and preventing the transmission of such diseases to man or to other animals. The source of diseases may be traced and preventive measures inaugurated through cooperation with various sanitary agencies. It also affords a means of detection of "cold-slaughtered" animals.

(*a*) Many infectious and toxic conditions fail to present visible alterations in the organs or tissues on post-mortem examination, while a ready diagnosis of such may be made ante mortem. This inspection is a valuable safeguard to the consumers of meat.

(*b*) Ante-mortem inspection is furthermore an aid to the conservation of the meat supply, not only in regard to animals in the stages of advanced pregnancy, but also in bringing prompt attention to animals recently giving birth to young, to immature and exhausted animals, and to others, thereby preventing their slaughter and subsequent post-mortem rejection during the time such conditions exist.

3. *When required.*—All animals should be given an inspection prior to slaughter, with the following exceptions:

(*a*) When in an emergency, immediate slaughter is necessary and the inspector is not available.

(*b*) When animals are slaughtered, as on a farm, and at subsequent inspection the organs, other than the stomach, intestines, and bladder, are found to be held by their natural attachments.

4. *Equipment of inspector.*—The ante-mortem inspector should provide himself with a notebook, fountain pen, a standard clinical thermometer, and a hand lens of strong magnification as an aid in demonstrating parasites.

5. *When and where conducted.*—Ante-mortem inspections may be conducted on the reservation at time of delivery, or later, on the premises of the owner or of the slaughtering establishment, at the unloading chutes and pens adjacent, or later in yards, pens, alleyways, or at the scales.

6. *Procedure on receipt of animals.*—The ante-mortem inspector should investigate the sanitary condition of all stock cars, unloading chutes, pens, alleyways, and runways. He should see that the same comply with all sanitary requirements.

(*a*) A preliminary visual survey of animals should be made at the time of unloading, to note any manifest evidence of communicable disease, or conditions of lameness, cripples, downers, emaciations, and parasitisms. (See par. 7*b*.) A careful survey should be made of the interior of each stock car immediately after being unloaded to discover any dead or downers or other pertinent conditions.

(*b*) The inspector should recommend that slaughter of fatigued or exhausted animals be withheld until such time as they have recovered from the effects of transportation. If fatigued or exhausted animals are killed immediately upon receipt, incomplete bleeding may occur, with a reduction in the keeping quality of the meat. Also the meat contains toxic substances as a result of fatigue and can not be considered normal. A rest period before slaughter should be allowed all such animals, varying according to previous conditions of transit, temperature, season, conditions, and fatigue of the animals. Whenever practicable, this rest period should be of 12 hours duration, and in no case of marked exhaustion should it be for less than 6 hours. This equally applies to animals delivered on the hoof which have been driven in from the range.

7. *Yard inspection.*—The inspector should pass through all pens of animals at least once daily, making examinations for ill, dying, or dead animals or other conditions. Recumbent animals should be aroused in order to note their physical condition.

(*a*) Animals exhibiting slight lameness, which would not prevent their ascending the runway to the killing floor, are not, as a rule, considered as suspects. However, they should be slaughtered separately and receive a careful post-mortem inspection.

(*b*) Temperatures should be taken and recorded on all downers and on other animals as may be thought necessary, especially in cases of suspected splenetic fever, hog cholera, anthrax, blackleg, pneumonias, septicemias, and severe injuries. A subnormal temperature may obtain just before death. A rise in temperature is the first indication of the onset of most communicable diseases. A carload, pen, or other lot of animals showing symptoms which would indicate communicable disease should be isolated in a separate pen for further observation. The isolated animals should be examined daily and temperatures taken and recorded until the diagnosis is established.

8. *Action.*—Animals may be (A) rejected outright, (B) rejected pending further observation or treatment, (C) passed for postmortem as suspects. Those not included in one of these three classes may be passed for slaughter.

(A) Animals should be rejected outright if dead or dying or when there is evidence of rabies, tetanus, anthrax, blackleg, splenetic fever, advanced scabies, railroad sickness, or any other disease or condition which on post-mortem examination would require rejection outright. (For causes of outright rejections, on post-mortem examination, see Sec. III, Subsec. E, pars. 2 and 3.)

(*a*) Close observation should be made in the yards and in the condemned-tank room for evidence of disease or injury shown by dead or dying animals in an effort to determine the cause and thus further aid ante-mortem and post-mortem inspections on the lots from which these animals came. Diseased animals are sometimes hastily slaughtered by the owner or operator in an effort to conserve their meat when there is likelihood of death from such disease. Because of the danger of meat poisonings in man from eating meat of animals so slaughtered, all such should be rejected outright and not taken into the slaughter room. This does not refer to recently injured animals, free from visible signs or indications of disease which are slaughtered without unnecessary delay.

(B) Animals suspected of infection with communicable diseases or contacts with such diseases should be held in isolation under constant observation. When the diagnosis is clear, they will be rejected outright, as above provided, or held for further treatment. Contacts may be passed at the termination of the period of incubation of the suspected disease.

(*a*) Hogs suspected of being affected with hog cholera may be held apart for treatment with anti-hog-cholera serum by the owner if this procedure is not in conflict with local sanitary regulations. Upon complete recovery they may be released for slaughter. At the expiration of 30 days after serum treatment, if free from symptoms of cholera or other transmissible diseases, they may be released for other purposes after proper disinfection has been carried out.

(*b*) Immature animals may be held till mature; then released for slaughter or for other purposes if not exposed to transmissible disease.

(*c*) Animals in stages of advanced pregnancy and those recently giving birth to young may be released for breeding or dairy purposes if not exposed to transmissible disease; otherwise may be held till fit for slaughter.

(*d*) Vaccine animals with unhealed lesions showing pyrexia, if not exposed to a transmissible disease, may be released for other purposes than slaughter.

(*e*) Cows affected with milk fever may be held apart for treatment. Upon complete recovery they may be passed provided other conditions are satisfactory.

(C) All animals suspected for any other condition or disease, not mentioned in paragraphs (A) and (B) should be held apart and slaughtered separately from the regular kill, as suspects.

(*a*) It is desirable that animals purchased in the field by supply officers for immediate slaughter be accepted subject to ante-mortem and post-mortem findings.

9. *Injuries received between inspection and slaughter.*—After ante-mortem examination and before slaughter, the following conditions may occur: Animals may slip and "spread" in the yards. They may become injured or killed from jumping off overhead runways, or by becoming loose on the killing floor and jumping through windows or down elevator shafts. Vicious use of prod poles or twisting the tails of cattle in forcing them into killing chutes may cause injuries. In the shackling pens, hogs or sheep may become bruised by blows from clubs, shackles, or from being kicked. Hogs hung up may slip from the shackles and become injured from the fall; or may fall upon hogs in the shackling pen beneath, causing in some instances fractured vertebræ of the latter. Hogs may slip from shackles and, if alive, may plunge into the scalding vat. Sheep, upon being hoisted after shackling, may thrash around and become mangled in the machinery.

10. The following conditions and diseases may be met with in ante-mortem inspections:

(*a*) *Cattle.*—Dead animals: Injured, diseased. "Downers," cripples, spreaders, gored animals, prod-pole injuries of rectum, subcutaneous emphysema, advanced pregnancy, recent parturition, emaciations, horns growing into face; actinomycosis, tuberculosis, ringworm, tumors, blackleg, splenetic fever, septicemia, scabies, reactors to tuberculin test, infective mammitis, poisonings, milk fever, and railroad sickness.

(*b*) *Calves.*—Immaturity, emaciation, bruises, calf diphtheria, ringworm, omphalophlebitis, vaccina, scours, blackleg, and splenetic fever.

(*c*) *Sheep.*—Dead animals: Smothered, diseased, injured. "Downers," fractures, dislocations, advanced pregnancy, recent parturition, emaciations, caseous lymphadenitis, malignant edema, dermatomycosis, scabies, lip-and-leg ulcerations; pnuemonias, especially in old ewes, and poisonings.

(*d*) *Goats.*—Pneumonias, emaciations, takosis, Malta, fever and parasitisms.

(*e*) *Swine.*—Dead animals: Smothered, injured, diseased. "Downers," cripples, temperature of 106° F. or above, emaciation, boars, recently castrated stags, advanced pregnancy, recent parturition, insanity, exhaustions, immaturity, polyarthritis, poisonings, mange, necrotic stomatitis, hog cholera and associated conditions, rabies, reactors to tuberculin test, abscesses, actinomycosis, hernia, and tumors.

III. POST-MORTEM INSPECTION.

1. *Definition and object.*—The term post-mortem inspection refers to an examination of carcasses of animals slaughtered for food purposes. This inspection is maintained to protect the health of the consumers of meats by eliminating those found to be diseased, unsound, unwholesome, or otherwise unfit for food.

2. *General description.*—This inspection should be performed at time of slaughter or as soon thereafter as possible and should include in sequence an examination of the head, viscera, and body, and a secondary rail inspection. A final and detailed examination should be given all carcasses set aside at any point in the routine post-mortem inspection. Such carcasses are said to be retained.

(*a*) For convenience of reference this section is divided into the following subsections:

A. Cattle.
B. Calves.
C. Sheep and goats.
D. Swine.
E. Action regarding diseased carcasses and parts.

In the first four of these divisions the routine steps of the inspection are discussed as they apply to each separate variety of animal. In the last subsection will be found the action indicated as regards all kinds of carcasses discussed under the headings of the various general and special pathological conditions which may be encountered.

3. *Equipment of inspector.*—The inspector should provide himself with the necessary facilities for inspection, including knife, sharpening steel, pouch, belt, suitable clothing, inspection stamp, inking pad, branding ink, notebook, and indelible pencil. Boiling water, containing 1 per cent of sodium carbonate, should be used for cleaning and disinfecting instruments and butchering implements. Bichloride of mercury solutions should not be used, except as may be hereinafter stated. An antiseptic soap may be used when necessary for disinfecting the hands of inspectors and establishment employees.

A. CATTLE.

1. *Collection of blood.*—When blood is collected for food purposes, the skin at the place of incision should be preferably shaved and in any case thoroughly washed and dried. The knife used in the bleeding operation and hands and arms of the "sticker" should be thoroughly clean. The blood should be caught in a sterilized metal receptacle constructed to afford protection against dust or other contaminations. The identity of this container of blood should be preserved as pertaining to the carcass from which the blood was drawn. Defibrination should be accomplished with a sterile metal defibrinating fork, and in no instance should the fingers come into contact with the blood or the inside of the container. If any suppurative lesion, however slight, or other gross lesion of infection or parasitism is noted anywhere in the carcass, the blood should not be used for food purposes.

(*a*) In the event that the machinery stops, and stunned cattle can not be hoisted in a reasonable time, they should be stuck where they lie in order to insure their bleeding out.

2. *Head inspection.*—The head, after removal from the carcass, should be thoroughly washed, as a bloody condition renders inspection difficult and more or less ineffective; it should then be prepared for inspection. The tongue should be sufficiently detached from the head bones by an employee to allow the proper examination to be made of the internal muscles of mastication, and also insure conditions favorable to an adequate tongue and tonsil inspection. The head inspection includes:

(*a*) An examination for icteric conditions of the adipose or other tissues, for epitheliomas, bruises, maggot-infested dehorning wounds, horns recurved and growing into the head, deformities, and superficially shown lesions of actinomycosis.

(*b*) A visual inspection of the tongue, tonsils, and oral mucosæ for actinomycosis, foot-and-mouth disease, necrotic or other mycotic stomatatis, injuries, foreign bodies embedded in the tongue or Steno's duct, cysticercus bovis, injected blood vessels, etc.

(*c*) Deep palpations of the tongue for abscesses, actinomycosis, cysticercus bovis, and foreign bodies.

(*d*) When erosins of the tongue occur, especially in the transverse furrow, without characteristic ulceration, induration, lymph node involvement, or abscess formation, there is no rational cause for the rejection of the entire tongue, and after the removal of the abrasions, the remainder of the organ may be passed for food.

(*e*) The internal muscles of mastication should be incised in such a manner as to split the muscles in a plane parallel with the lower jawbone. The masseter muscles also should be incised, splitting the entire external layer between the outer and intermediate fasciæ; this also should include the parotid lymph nodes, inspection of which is essential in old cows. The visual inspection of incised musculature is made to determine the presence of cysticercus bovis.

(*f*) The submaxillary and postpharyngeal lymph nodes are incised and examined for tuberculosis, actinomycosis, and simple abscesses. Each lymph node should be incised in several places, as one incision would not permit an adequate inspection. If disease is found in the head, it, with the carcass and all its parts, should be retained and further appropriate measures taken as each individual case demands and as hereinafter described.

3. *Miscellaneous inspection.*—When legs are intended for edible purposes, their handling should insure cleanliness. The penis and testes, when present, should be removed and rejected.

(*a*) The mammæ, if present, should be removed and examined for tuberculosis, milk flow, mammitis, and pus. In order to prevent the unnecessary contamination of carcasses by pus or other objectionable material from the mammary glands and the rejection of the parts thus contaminated, all mammary glands of cows which have lactated should be removed from the carcass without opening the milk ducts or sinuses or incising the glands or teats or any abscess which may be present. When desired for food purposes, udders from cows used for breeding purposes only should be examined by palpation, and incisions made when necessary. Udders from dairy cows should be sliced in sections about 2 inches thick, then thoroughly inspected. This inspection should also include the supramammary lymph nodes. If pus or other objectionable material is permitted to come into contact with the carcass, the parts of the carcass thus contaminated should be removed and rejected.

(*d*) Inspection should be given the caul for pus and "pearly" form of tuberculosis.

4. *Body and visceral inspection.*—The uterus should be examined for signs of parturition, recent parturition, acute or septic metritis, pyometra, and other conditions. The size and development of the fetus, if present, should receive consideration. The genital organs with the fetus and its membranes, if present, should be removed and rejected. The bladder should be inspected for dark-colored urine, hemorrhages, or inflammation.

(*a*) Palpation and incisions, when necessary, in conjunction with a visual inspection, should be given the hock and stifle joints, the precrural, internal iliac, and the superficial iliac or supramammary lymph nodes, as the case may be. Swollen hock joints and adjacent tissues of beef animals, especially old cows, should be carefully examined in order that all cases of localized tuberculosis may be detected. It is also very important to make a careful examination of the lymph nodes which drain these tissues, especially the popliteal and precrural nodes, in order that the extent of the disease may be determined. Tubercular lesions frequently occur as calcified swellings with little or no acute inflammation in the hock and stifle-joints region of old cattle. It is therefore desirable to make an examination by incision into the aponeurotic sheath in the region of the internal tuberosity of the tibia.

(*b*) Provisions should be made to prevent viscera or other parts of carcasses from coming into contact with the floor. All openings of organs, as the alimentary canal and bladder, should be ligated to prevent contamination of the carcass or viscera with their contents. In some abattoirs the viscera is removed entire. Care should be taken in detaching abscessed livers in order to prevent pus contamination of the carcass and viscera.

(*c*) After evisceration, a perfunctory examination of the carcass should be made with special reference to color, odor, multiple abscesses, rectal hemorrhages, pus contaminations, cystic or abscessed kidneys, hematomas, emaciation; and for tuberculosis, adhesions, inflammations, and subserous hemorrhages of the parietal pleura and the peritoneum. In the event of pus contamination of the carcass, a tentative cleansing with boiling water should be made. This, however, is not sufficient in itself, and is to be supplemented with trimming and rejection of the parts affected. This procedure is usually accomplished after the cervical vertebræ have been divided. If the sternebræ are contaminated, they should be trimmed off with a cleaver prior to hoisting. In case the viscera truck becomes contaminated from diseased or contaminated viscera, it should be rendered as clean as possible before again being used. Boiling water should be used for this purpose.

5. *The gastrointestinal tract.*—This inspection includes:

(*a*) Palpation or incision of the mesenteric and colic lymph nodes for tuberculosis, the lesions of which should not be confounded with those of the Pentastoma denticulatum.

(*b*) A visual inspection of the intestinal tract and visceral peritoneum for paratuberculosis, pentastoma foci, inflammations, injected blood vessels, hemorrhages, pus contaminations, tuberculosis and prod-pole injuries of the rectum.

(*c*) A visual survey of the spleen for enlargements, softenings, abscesses, and tuberculosis.

(*d*) A visual examination of the stomachs for abscesses, pus contaminations, inflammations, adhesions, hemorrhages, tuberculosis, and foreign bodies penetrating the reticulum.

6. *The liver.*—Examination of the gall-bladder is made for lesions of splenetic fever. The gall-bladder should be rejected.

(*a*) Incisions of the liver are made through the larger bile ducts, and adjacent to the Spigelian lobe on the gastric surface for indications or the presence of liver flukes (fasciola magna, or hepatica). The veins and bile ducts, upon massage toward the incision, may disclose the parasite. The nature of the blood in the veins should be noted. Sometimes pus in the bile ducts is due to a deeply embedded abscess. The portal lymph nodes are incised and examined for enlargements or for tuberculosis. A thorough visual examination of the entire liver should be made for icterus, fatty degenerations, sclerosis, tuberculosis, actinomycosis, cysticercus tenuicollis, echinococci, coccidiosis, hyperemias, adhesions, hemangiomas, pus contaminations, abscesses and healed lesions of former abscessed conditions. This examination should be supplemented by deep palpations for abscesses. Various incisions, if necessary, may be made for abscesses, fatty degenerations, hemangiomas, or other conditions. Lesions of the caudal mediastinal lymph nodes sometimes obtain to a diseased liver.

(*b*) In inspecting the liver or any other organ, the inspector should determine if some part is missing. If the part missing can not be found, the entire organ should be rejected. The management of the establishment, if necessary, should be cautioned in this regard.

(*c*) During unusual emergency light-colored livers of dairy cows or pregnant animals in which disease is not evident or hepatogenous icterus present, and those bearing healed scars, yet wholesome, with no evidence of pathological alteration, may be passed for food purposes.

(*d*) Livers showing infestation with fasciola hepatica, fasciola magna, dicrocœlium lanceatum, larval stages of œsophogostomum radiatum and linguatula rhinaria, echinococcus cysts, and cysticercus bovis should be rejected. Livers affected with cysticercus tenuicollis or presenting superficially small calcified nodules, or other minor lesions caused by this parasite, may be passed for food after the affected portions are removed, if this can be accomplished without excessive mutilation; otherwise the entire liver should be rejected. Caseous or calcareo-fibrous nodules, existing as sharply circumscribed formations in the liver, usually indicate a parasitic origin. Their differentiation from lesions of tuberculosis in the liver can usually be made by the absence of any alterations in the hepatic lymph nodes.

7. *The lungs.*—Incisions should be made in the left and right bronchial and the median and posterior mediastinal lymph nodes to determine tuberculosis or other diseases or enlargements. A visual examination should be given the lungs for adhesions, pleuritis, pneumonias, liver flukes and other parasites, actinomycosis, tuberculosis, odiomycosus, pneumonomycosis, hemorrhages, gangrene, etc. This should be followed by deep palpations. If necessary, incisions may be made in various places. Cattle lungs, intended for food purposes, should be inspected to determine the presence of foreign matter in the air passages. The main bronchi and branches should be slit and if objectionable foreign matter is present within these passages the lungs should be rejected.

8. *The heart.*—The heart should be given a visual examination of the surface, followed by a longitudinal incision through the wall of the left ventricle from the base to the apex, then through the interventricular septum. The blood from these cut surfaces and from the endocardium should be removed with the knife blade, after which they should be given a thorough visual inspection, followed by palpation of the entire organ for evidence of cysticercus bovis, tuberculosis, inflammations, degenerations, adhesions, gangrene, edemas, and subepicardial and subendocardial hemorrhages.

9. *Rail inspection.*—The outside of each half of the carcass should be inspected for bruises, fractures, symptomatic anthrax (blackleg) lesions, dirt contaminations, emaciation, anemia, icterus, and grubs (hypoderma bovis and lineata larvæ). Carcasses showing grubs superficially located, or lesions caused by them, should be trimmed sufficiently to remove all parasites, together with any tissues altered or discolored from such invasions. The prescapular lymph nodes may be palpated.

(*a*) The inside of each half should receive consideration—the vertebræ and sternebræ for tuberculosis, injected red bone marrow, and presternal calcifications; the parietal peritoneum and pleura for tuberculosis ("pearly" disease), adhesions, removal of pleura, inflammations, hematomas, fecal contaminations, injected capillaries, subserous hemorrhages, pus contaminations, and necrosis of retroperitoneal fat.

(*b*) The diaphragm and its pillars should be examined for measles, and exhaustion or other hemorrhages; then lifted up and their thoracic surfaces examined for tuberculosis. The ribs should be examined for fractures, tuberculosis, or pus conditions. The kidneys should be examined for consistency, injections, tuberculosis, abscesses, and contaminations. If any of the liver has been left attached under the right kidney, it should be removed and rejected. Frequently abscesses of the serosa occur in this region, metastatic from the liver.

(*c*) Examination should be given the sterno-diaphragmatic, prepectoral, superior cervical- and caudal mediastinal (if left attached) lymph nodes. Examination of the cut surfaces of the musculature should be made for hemorrhages and measles. It should be ascertained if all inedible and rejected parts have been removed. This includes especially contaminations, as floor, fecal, or pus; udders; and bruises.

10. *Final inspection of retained carcasses.*—(*a*) *Tuberculosis.*—A careful survey should be given the head, viscera, and carcass as on routine inspection. The lymph nodes of the head and viscera should be thoroughly incised and scrutinized. Incisions should be made in the lymph nodes of the sublumbar region, the mediastinal lymph nodes (if left attached in the carcass), sterno-diaphragmatic, prepectoral, cervical, and prescapular lymph nodes. When lesions of tuberculosis are found in the cervical lymph nodes and the carcass is to be passed for food, after the head has been rejected, the prepectoral, neck, and superior cervical lymph nodes, together with adjacent adipose tissue, should be removed and rejected.

(*b*) *Actinomycosis.*—The final inspection routine is practically the same as that pursued for tuberculosis. When lesions of actinomycosis are found in the head, but not in the viscera, the incision of the body lymph nodes may be omitted. However, the final inspector should make a careful survey of the carcass, including palpation of the region of the body lymph nodes, for the detection of possible abnormal conditions. The body lymph nodes should be incised and examined when lesions of actinomycosis are found in the viscera. In many cases the lesions of actinomycosis are found only in the liver.

(*c*) *Cysticercus bovis infestation* (*beef measles*).—When a beef carcass is retained for measles, all the exposed musculature should be examined; also the external and internal muscles of mastication, tongue, heart, and the muscular portion of the diaphragm, including the pillars, should be carefully and thoroughly sliced, to insure finding all cysts. Prior to inspection of the attached diaphragm, its peritoneum should be removed. A palpation for calcified cysts should precede the incisions. It is not considered necessary in a final examination to shred the liver.

(*d*) *Miscellaneous.*—All carcasses retained for suspected icterus should be permitted to chill out for 24 hours before the final passing on them, which should be accomplished in natural lights In doubtful cases, after chilling, a decision may be reached sometimes by the condition of the bone marrow, as shown by sawing through the fore shank.

(*e*) Great care should be exercised in the final post-mortem inspection of all suspects, especially "downers." Also this should apply to emergency slaughtered animals. Secondary inspections. should be given all organs and parts after the same are washed and trimmed.

B. CALVES.

1. *General considerations.*—The routine inspection simulates that for cattle, except as otherwise noted. Calves heavily infested with lice (*Hæmatopinus vituli* or *Trichodectes scalaris*) should have their hides removed immediately after slaughter to prevent the parasites from crawling onto the meat. When infested with splenetic fever ticks (*Margarapus annulatus*) carcasses should not be taken from establishments until the ticks or the hides are removed.

(*a*) When calf carcasses are dressed with the hide left on, the skins should be thoroughly washed with water and scrubbed with brushes to remove all manure, dirt, or other foreign material before evisceration. The excess water should be removed from the hair by hand scrapers or drying cloths. Carcasses and parts of bovine animals over 12 months old should not be considered veal or calves. In the slaughter of such animals the hides should be removed at time of slaughter to afford opportunity for proper inspection. In any event, when the hide is not removed, the inspector is handicapped in examining for bruises and blackleg lesions.

(*b*) Examinations should be made especially for foot-and-mouth disease, calf diphtheria, tuberculosis, abscesses, splenetic fever, blackleg, vaccina, immaturity, anthrax, hemorrhagic septicemia, fetus, exhaustion, emaciation, and cysticercus bovis.

(*c*) Unborn or stillborn animals should be rejected. The undressed carcass of a fetus shows soft, untouched sole pads, remains of umbilical cord, and umbilical vessels open and containing blood. The dressed carcass shows atelectic lungs (if not artificially inflated), absence of coagulated milk in digestive tract, meconium, open urachus, gaping condition of the umbilical vessels, and undeveloped tissues.

2. *Head inspection.*—The submaxillary and postpharyngeal lymph nodes are incised for infections, especially that of tuberculosis. In calves over six weeks of age, a careful, visual examination for cysticercus bovis should be given the exposed musculature.

3. *Viscera and body inspection.*—The mesenteric and colic lymph nodes should be palpated. The intestines should be inspected for inflammations. Any indication of navel ill should be

considered. The mediastinal and bronchial lymph nodes should be incised with especial reference to tuberculosis, which in some instances may present the arbor-vitæ appearance. The lungs should receive a deep palpation and visual examination for tuberculosis, parasitic conditions, pneumonias, hemorrhages, etc.

(*a*) Lungs containing ingesta or other objectionable foreign material in the air passages should be rejected. The routine inspection of calves over 6 weeks old for the presence of cysticercus bovis may be limited to a careful examination of the heart and such other surfaces as is practicable to examine. The liver, including the portal lymph nodes, should receive the same inspection as beef livers for parasites, tuberculosis, and abscesses.

(*b*) The outside of each carcass should be examined for arthritis, lesions of blackleg, fractures, parasites, and dirty hide. The inside should be inspected for bruises, fractured ribs, rachitis, adhesions, pleuritis, hemorrhagic musculature, immaturity, emaciation, abnormalities of the thymus, and other conditions. In the carcass of the male, the testes should be removed and rejected.

C. Sheep and Goats.

1. *General considerations.*—The following routine of inspection refers to that of sheep. The procedure for goats is essentially the same, the inspector considering conditions and diseases peculiar to the goat with special reference to takosis and Malta fever.

2. *Superficial inspection.*—A visual survey of the outside of the carcass should be made to detect stains, abscesses, pus contaminations, hoofs, attached pieces of skin, bruises, maggot infested wounds, fractures, icterus, emaciation, anemia, herniæ, sternal chondromas, and foreign bodies as barley beards, wild oats, cactus thorns, grease-wood barbs, etc., embedded in the subcutaneous tissues, especially in the abdominal region; scabies, dermatomycosis, burns, lip-and-leg ulcerations, and foot-and-mouth disease.

(*a*) Palpation is given bones for the presence of fractures, muscles for cysticercus ovis, and lymph nodes for caseous lymphadenitis. A thorough deep palpation is given the hind legs, popliteal and precrural lymph nodes, back and sides, prescapular lymph nodes, forelegs, and the superficial inguinal lymph nodes and penis, or supramammary lymph nodes and mammæ, as the case may be.

3. *Viscera and body inspection.*—The uterus should be inspected for metritis, dead fetus, and advanced pregnancy or recent parturition. Genital organs should be rejected, together with the fetus, if present. Care should be exercised to prevent rupture of the urinary bladder or liberation of gastric contents.

(*a*) The caul fat, if desired as an edible product, is inspected for cysticercus tenuicollis, and fecal or floor contaminations. When cysticercus tenuicollis infestation is slight, the cysts may be removed and the caul passed for food. If fecal or floor contaminations exist, the caul should be rejected. The identity of all viscera and parts should be preserved until the carcass has been finally disposed of.

(*b*) After evisceration an inspection should be given the pelvic outlet for the presence of the anus, rectum, urinary bladder, fecal pellets, and caseous lymphadenitis in lymph nodes of that region. Palpation should be given the lymph nodes in the sublumbar region, and the kidneys for caseous lymphadenitis. Upon a liver being rejected, examination under the right kidney should be conducted to remove any portion of liver that remains. The spleen also should be removed. A thorough palpation of the inner abdominal musculature and the diaphragm and its pillars should be made for cysticercus ovis. Palpation should be continued over every part of the walls of the thoracic cavity. The parietal pleura should be examined for caseous lymphadenitis, pleuritic adhesions, and acute pleuritis; the ribs for fractures; and the mediastinal lymph nodes if not removed, and the suprasternal lymph nodes for caseous lymphadenitis. The inspector should determine if fecal contamination has occurred. Drainage of the thoracic cavity should be provided. A visual inspection should be given the interior of each carcass to detect exhaustion hemorrhages in the musculature, adhesions, icterus, and parasitisms. Odors, if present, should be noticed, especially those of parasitic ictero-hematuria.

4. *The liver.*—The gall-bladder should be inspected for lesions of parasitic ictero-hematuria, and the presence of fringed tapeworms (*Thysanosoma actinioides*). Visual inspections, and palpations of the liver should be made for cysticercus tenuicollis, congestions, fatty degeneration, sclerosis, icterus, caseous lymphadenitis, and liver flukes (*Distoma hepaticum*). The bile ducts should be incised for fringed tapeworms and liver flukes. The portal lymph nodes should be examined for caseous lymphadenitis.

5. *The lungs.*—Palpations or incisions should be made for caseous lymphadenitis, lung worms (*Strongylus filaria*), pneumonias, adhesions, abscesses, hemorrhages, and tumors. The mediastinal and bronchial lymph nodes should be palpated.

6. *The heart.*—Inflammations, subepicardial hemorrhages, adhesions, and cysticercus ovis may be found on visual examination, which should be supplemented by deep palpations and incisions for cysts.

7. *Final inspection.*—All bruises on passed carcasses should be trimmed out during routine inspection, unless the establishment desires to chill the carcass in the retaining cooler prior to the trimming. Pus, fecal contaminations, stains, and foreign bodies in the subcutaneous tissue should be removed with a knife. "Christmas-dressed" carcasses, where so-called "diamond dust" is used for ornamental purposes, should be considered as contaminated.

(*a*) If a liver contains parasites not sufficient in number or kind to cause rejection, other conditions being favorable, the parasites may be trimmed out and the liver passed for food. Pleuritic or peritoneal adhesions and hemorrhagic diaphragms in a passed carcass should be removed and rejected.

(*b*) *Caseous lymphadenitis.*—Body and viscera lymph nodes, including the sublumbar, mesenteric, and cervical, should be incised or palpated, and the kidneys, liver, and lungs thoroughly examined, consideration being given the condition of the animal. In food carcasses all diseased lymph nodes and adjacent parts, also the popliteal lymph nodes, should be removed and rejected.

(*c*) *Cysticercus ovis infestation* (*sheep measles*).—The diaphragm and its pillars, the heart, tongue, and muscles of mastication, should be detached, then palpated, and finally shredded with a knife, making a thorough search for cysts. Thorough palpations of the musculature of the carcass should follow.

(*d*) When a carcass has been passed for food, it should be thoroughly washed, using clean water. Washing cloths should be clean. Re-inspections should be made on carcasses and parts about to be passed to see that all inedible and rejected portions have been effectually removed.

D. SWINE.

1. *Head inspection.*—Various incisions are made in the cervical lymph nodes, especially the submaxillary, for the presence of arbor vitæ or other tubercular lesions, actinomycosis, and abscessed conditions. A visual examination should be given for cysticercus cellulosæ (pork measles), necrotic stomatitis, and gross skin lesions.

2. *Skin and body inspection.*—Visual examination should be made for skin lesions of cholera, urticaria; granular eruptions; hemorrhages due to bites of lice; hematogenous, icteric, or melanotic pigmentations; pigmented moles; pigmentation of the legs and belly due to filth; discoloration of adipose tissue or skin due to feed or to uremia; scratches from tusks; bruises; hypostasis; erythema due to frosting of the skin, or to the live animal entering the scalding vat; frozen skin containing hair; ingrown hairs; tumors; sarcoptic and demodectic scabies; abscesses; hair; scurf; hoofs; contaminations; cooked skin; ringworm; necrosis of the skin; tuberculosis or actinomycosis of the mammæ; "seedy" belly, emaciation, fractures, ascites, boars, recently castrated stags, scirrhus cord, heads dragging on floors; polyarthritis, and deformities.

(*a*) At evisceration, consideration should be given cryptorchids, hemorrhages of the hip joint, or other muscular regions, pyemia, septic metritis, advanced pregnancy, recent parturition, dead fetus, urine contamination, and uremic or sexual odors. Genital organs and fetuses should not be thrown onto the floor, which should be kept clean.

(*b*) The "gut" bench should be kept clean, and jets of boiling and cold water should be available to sterilize the table or to clean fecal contaminated viscera, so that a proper inspection can be made.

3. *Viscera inspection.*—This should include:

(*a*) Palpation of the spleen for tuberculosis, and a visual examination for hemorrhages, tumefactions, parasitic or other nodules simulating tuberculosis, and "sago" spleen.

(*b*) Palpation of superior aortic, and incisions of bronchial lymph nodes for tuberculosis, or enlargements, and a visual inspection noting color.

(*c*) Palpation of lungs for tuberculosis, and abscesses; also should note pneumonias, pleuritis, adhesions, hemorrhages, tank water, blood from a "poor stick," strongylosis, and flukes (*Paragonimus kellicotti*).

(*d*) Visual inspection of the heart for adhesions, inflammations, hemorrhages, tuberculosis, and measles, and incision of the myocardium for measles.

(*e*) Visual inspection of the liver for icterus; congestion; foreign material, as sand or hair, in the bile ducts; hemorrhages; tuberculosis; parasites, as *Cysticercus tenuicollis* and *Cysticercus echinococcus;* hemangiomas; degenerations, as amyloid, fatty, and albuminoid; sclerosis, adhesions, and enlargements. The gall bladder may contain calculi.

(*f*) Incisions of gastrohepatic lymph nodes for tuberculosis, or enlargements.

(*g*) Visual inspection of stomach, intestines, and mesentery for fecal contamination, adhesions, abscesses, tuberculosis, emphysema, calcification of mesothelium parasitic nodules, hemorrhages, erosions, injections, and inflammations.

(*h*) Visual inspection of the pancreas for necrosis of fat.

(*i*) Palpation of the mesenteric and colic lymph nodes for tuberculosis, and visual inspection for hemorrhages.

(*j*) If cholera is suspected, the kidneys should be examined; and also the sternebræ, cutting through the same. Kidneys may be cystic or present tumors or parasites.

(*k*) Odor and color should be observed, and if necessary the inside of the carcass may be examined for tuberculosis of the serosa, hemorrhages, adhesions, inflammations, abscesses, injections, testes, and measles.

4. *Final inspection.*—This includes sectioning of the head and visceral lymph nodes, and a visual inspection of the carcass and viscera, also noting any odors present. When tuberculosis is found, the body lymph nodes may or may not be examined, according to the location or extent of the disease in the head, viscera, and visible portions of the carcass.

(*a*) Inasmuch as body lymph nodes are usually free from tuberculosis, when lesions in the cervical region are not accompanied by a lesion in a visceral lymph node or organ, the examination of these nodes may be omitted in carcasses showing disease limited to the cervical region. The examination of body lymph nodes may be omitted in carcasses not showing disease in the cervical region and in which visceral lesions are not present except in the mesenteric chain. However, the final inspector should make a careful survey of the pleural, peritoneal, and other surfaces for the detection of possible abnormal conditions, and when lesions are present in the cervical region, he should see that the parts are properly removed and rejected.

(*b*) An examination should be made of body lymph nodes of each carcass showing evidence of tuberculosis in both the cervical region and viscera. An examination should be made of body lymph nodes of carcasses showing evidence of tuberculosis in the mesenteric chain together with disease in the viscera or elsewhere.

(*c*) Inspection of the body lymph nodes should be conducted as follows: Incisions with visual inspections of the superficial inguinal or supramammary chains, of the precrural, internal iliac, and sublumbar lymph nodes; inspection and removal of any superior aortic lymph nodes left in the carcass; removal of the inferior thoracic and prepectoral lymph nodes; and, if the head is affected, all cervical lymph nodes with tissues immediately adjacent; and removal of the prescapular lymph nodes. In all instances inspections should be given the vertebræ, pleura, peritoneum, kidneys, mammæ, genitals, musculature, and the condition of the animal.

(*d*) It is generally understood that 11 or less foci in a part or organ would be classified as slight infection, 12 foci as well marked, and more than 12 foci as extensive. However, consideration should be given whether lesions are evenly distributed or localized to a part.

(*e*) *Hog cholera.*—Examination should include skin lymph nodes, kidneys, bones, sternebræ, fat, lungs, and the gastrointestinal tract.

(*f*) When sexual odor is suspected after chilling the carcass for 24 hours, the heat test should be given.

(*g*) Carcasses or parts passed for food should have all rejected and inedible parts removed. Food carcasses emerging from the final room should be thoroughly washed.

5. *Rail inspection.*—This is conducted to determine if carcasses are properly branded; also for the presence of tag rings, hair, scurf, bruises, abscesses, melanotic deposition, urticaria, yellow discolorations, erythemas, injections, demodectic scabies, and other skin conditions. Consideration should be given the presence of the anus, internal bruises, fractured leg bones or ribs, or lesions of the ribs resulting from fractures, polyarthritis, sexual odor, uremia, adhesions of the pleura, bone or skin lesions of cholera, bone lesions of tuberculosis, and fecal, pus, blood, or floor contaminations. Sometimes contaminations due to dust, rust, or oil from machinery, sawdust, or scaling whitewash may obtain.

E. ACTION REGARDING DISEASED CARCASSES AND PARTS.

1. *General considerations.*—Great care should be exerted to prevent transmission of contamination from diseased carcasses or parts by means of inspectors, employees, and their equipment or implements. Immediately after the slaughter of an animal rejected for communicable disease the slaughtering premises and implements should be thoroughly sterilized with boiling water, and in case of anthrax all parts, including hides, horns, feet, viscera, intestinal contents, trimmings, and blood, should be immediately incinerated or completely destroyed, and the killing bed and implements involved first sterilized and cleaned with boiling water, then disinfected with a bichloride of mercury solution 1:1000.

(*a*) The part of any carcass coming into contact with a rejected carcass or part or contamination therefrom, or with the place or implements of slaughter prior to their proper disinfection, should be rejected outright. If such contaminated part is not removed from the carcass within two hours, the entire carcass should be rejected outright. Plenty of boiling water should be available for disinfecting tables, containers, and butchering implements, also antiseptic soap for disinfection of hands.

2. *Outright rejection.*—Carcasses should be rejected outright for food purposes when any of the following conditions are present:

(*a*) Evidence of anthrax, foot-and-mouth disease, blackleg, splenetic fever, hemorrhagic septicemia, malignant epizootic catarrh, contagious pleuropneumonia, unhealed vaccine lesions, rinderpest, pyemia, septicemia, sapremia, toxemia, poisonings, parasitic ictero-hematuria of sheep, hog cholera, swine plague, cysticercus cellulosæ, suffocation, hogs entering scalding vat alive, immaturity, stillborn or unborn animals, takosis, Malta fever.

(*b*) Tuberculosis, actinomycosis, caseous lymphadenitis, melanosis, pseudoleucemia, sarcomatosis, carcinomatosis, cysticercus bovis, cysticercus ovis, or other parasitic infestations, when generalized.

(*c*) Whenever any disease or condition as necrobacillosis, paratuberculosis, or white scours in calves progresses beyond the point of localization to that of toxemia, emaciation, degeneration of glandular organs, or other evidence of generalization.

(*d*) When carcasses are so infected that consumption of meat thereof may give rise to meat poisonings. This includes all carcasses showing signs of either acute inflammation of serous membranes or lungs; puerperal, traumatic, or other septicemia or pyemia; acute diffuse, hemorrhagic, or gangrenous enteritis, gastritis, metritis, or mammitis; polyarthritis; traumatic pericarditis; phlebitis of umbilical veins; or any acute inflammation or suppurative condition associated with such systemic lesions as acute inflammation, swellings or degenerations of kidney, liver, spleen, or lymph nodes, or marked pulmonary hyperemia or redness of the skin either singly or in combination.

(*e*) Icterus with a parenchymatous degeneration of organs, and carcasses which show an intense yellow or green discoloration, or those which after chilling out for 24 hours do not lose such discoloration as shown by inspection under natural light.

(*f*) The odor of urine or a sexual odor, as shown by the heat test after chilling out for 24 hours.

(*g*) Mange or scab in advanced cases with emaciation or inflammatory involvement of the muscular tissues.

(*h*) Evidence of "cold" slaughter; or a history of rabies, tetanus, milk fever, or railroad sickness obtaining at slaughter.

(*i*) When too anemic or emaciated to produce wholesome meat or showing slimy degeneration of fat or serous infiltration of muscles.

(*j*) Showing signs of parturition or having given birth to young within 10 days.

(*k*) When badly or extensively bruised.

3. *Rejection in whole or in part depending on the extent of involvement by special conditions.*—(*a*) *Tuberculosis.*—Carcasses affected with tuberculosis should be rejected outright when at slaughter pyrexia is present, when there exists an emaciation or anemic tuberculous cachexia due to satiation with toxic products of tuberculosis or associated septic infections; when lesions are multiple, acute, or actively progressive; or if generalization is shown by systemic involvement, as in addition to infection in the respiratory or digestive tract, lesions are found in two of the following organs—spleen, kidney, uterus, udder, ovary, testicle, adrenal gland, and brain or spinal cord or their membranes; when numerous tubercles are uniformly distributed throughout both lungs; when lesions of tuberculosis are found in muscle tissues, bones, joints, sexual glands, or lymph nodes associated therewith; or in the following lymph nodes—splenic, renal, popliteal, pre-

scapular, and inguinal when several of these parts or organs are coincidentally involved; when lesions are extensive in one or both body cavities. Carcasses which reveal lesions more severe or more numerous than those described under the succeeding subparagraph should be rejected.

Carcasses showing slight localized and calcified or encapsulated lesions of tuberculosis may be passed for food when such lesions are limited with no evidence of systemic involvement, provided the parts containing lesions are removed and rejected. This would include lesions as follows: When in one body cavity, two groups of visceral lymph nodes and one organ are involved slightly; or in addition to cervical lesions, two groups of visceral lymph nodes or one group of visceral lymph nodes and one organ are affected; when in one body cavity two groups of visceral lymph nodes are affected and in the other body cavity one group; or when cervical lesions are present in addition to those in one group of lymph nodes in each body cavity, and very slight lesions in the liver.

An organ or a part of a carcass should be rejected outright when it or its corresponding lymph nodes contain lesions of tuberculosis, if it is adjacent to a serous membrane involved, or when it is contaminated by tuberculous material. When a carcass is passed for food and the lesions in the thoracic cavity are slight and limited to the lymph nodes, the heart may be passed, but the remainder of the thoracic viscera should be rejected. In a passed carcass, when the lesions in the abdominal viscera are slight and limited to the portal lymph nodes, the liver and portal lymph nodes should be rejected, but the stomach, intestines, caul, and mesenteric fats may be passed for food.

(*b*) *Actinomycosis.*—Generalized actinomycosis requires rejection outright. If in a well-nourished condition, and the lesions are localized, the carcass may be passed for food after the organ or parts affected are rejected. When affected, the head, including the tongue, should be rejected, except when the disease of the jaw (lumpy jaw) is slight, strictly localized and without suppuration, fistulous tracts, or lymph node involvement, the tongue if free from disease may be passed; or, when the disease is slight and confined to the lymph nodes, the head, including the tongue, may be passed after the affected nodes have been removed and rejected.

(*c*) *Caseous lymphadenitis.*—A carcass showing generalized caseous lymphadenitis should be rejected outright. This includes all those showing well-marked lesions in the viscera and skeletal lymph nodes; extensive lesions in any one part; in a thin carcass showing well-marked lesions in the skeletal lymph nodes and slight lesions elsewhere; or in a thin carcass showing well-marked lesions in the viscera and only slight lesions elsewhere. All affected organs or parts should be removed from a carcass to be passed for food and rejected.

(*d*) *Hog cholera and swine plague.*—Carcasses of swine not marked as suspects or not coming from a lot containing hogs sick with hog cholera or swine plague should be rejected when acute or characteristic lesions or evidence of hog cholera or swine plague are found elsewhere than in the kidneys and lymph nodes. However, lesions in the kidneys and lymph nodes should be considered on a final decision. Carcasses of hogs marked as suspects showing lesions, however slight, including those in the kidneys or lymph nodes, should be rejected.

(*e*) *Cysticercus bovis infestation.*—If a carcass is watery or discolored, or if infestation is excessive, as shown by the presence of two or more cysts within an area the size of the palm of the hand on most of the cut surfaces of musculature when incisions are made, it should be rejected outright.

When infestation is limited to one degenerated dead cyst, the carcass may be passed for food after removal and rejection of the cyst.

In a slight or moderate infestation other than indicated above, as determined by careful final examination as herein outlined, the carcass may be passed for food after removal and rejection of the cysts and surrounding tissues, provided the carcass and parts, properly identified, are held in cold storage or pickle for 21 days under conditions insuring proper preservation, and if the temperature does not exceed 15° F. the period of refrigeration may be reduced to six days. Otherwise the carcass should be rejected outright.

(*f*) *Cysticercus ovis infestation.*—Carcasses in which are found more than five cysts after thorough examination should be rejected. If not to exceed five cysts, may be passed for food after the cysts have been removed and rejected.

(*g*) *Trichinella spiralis.*—Inasmuch as it can not be determined definitely by any present known method of inspection whether muscle tissue of swine contains trichinæ which are dangerous to health, no article of a kind customarily eaten without cooking, should contain pork muscle tissue unless it has been subject to heat so that all portions attain a temperature not lower than 137°F., or subjected to refrigeration not less than 20 days at a temperature not higher than 5° F., or such curing treatment as approved by this office sufficient to destroy all live trachinæ.

(*h*) *Parasites, general.*—When lesions of parasites not transmissible to man are localized or are of such character that their removal from an organ or part may be facilitated without mutilation, after such removal and rejection the organ or part may be passed for food. If too numerous, if their removal would result in mutilation, or if the lesions render an organ or part unfit for food, rejection is required. In infestation with multiceps multiceps, the carcass may be passed for food, but the brain and spinal cord rejected. Organs or parts affected with hydatid cysts (*Echinococcus*) or flukes should be rejected. Sheep livers infested with fringed tapeworms (*Thysanasoma actinioides*) should be rejected. (See Subsec. A, par. 6*d*.)

(*i*) *Tumors.*—Whenever a sarcoma or carcinoma involves an internal organ to a marked extent; affects the muscles, bones, or lymph nodes primarily or secondarily; is metastatic; or if secondary changes have occurred in the muscles, the carcass should be rejected outright. Whenever an organ or a part is affected it should be rejected.

(*j*) *Immaturity.*—Carcasses too immature to produce wholesome meat should be rejected. This includes those lacking general good muscular development; when muscles contain a serous infiltrate or appear water-soaked, loose, flabby, grayish in color, and easily perforated; or if the retroperitoneal tissue adjacent to the kidneys is dirty yellow or grayish red, edematous, tough, and intermixed with flocculi of fat.

(*k*) Carcasses of hogs affected with urticaria (diamond skin disease), tinea tonsurans, demodex folliculorum, or erythema may be passed after detaching the affected skin, if the carcass is otherwise fit for food.

(*l*) Any organ or part badly bruised, abscessed, or contaminated should be rejected.

IV. PRODUCTS INSPECTION.

A. GENERAL.

1. *Definition and purpose.*—The term "products inspection," as used in this section, will include an initial inspection of the articles hereinafter named and all reinspections. It likewise includes selection, grading for purchase, and the sanitary supervision of the various processes involved in curing, pickling, rendering, canning, manufacturing, branding, labeling, weighing, packing, shipping, storing, or other manipulation.

(*a*) Products inspection covers fresh unfrozen and frozen beef, veal, pork, mutton, goat meat, rabbits, poultry, game; fresh fish, oysters, other sea foods and eggs; canned meats of all kinds, including issue and breakfast bacon, ham, sliced beef, corned beef, fresh roast beef, beef tongue, corned-beef hash, pork sausage, vienna sausage, boneless turkey, salmon and other fish or sea foods, and milk; cured pork and beef products, and fish; rendered or prepared fats, as lards, lard substitutes, or compound, oleomargarine, also butter and cheese; sausages of all kinds, boiled ham, tripe, pigs' feet, and all other miscellaneous pork or meat products generally.

(*b*) Re-inspection implies a prior inspection and refers to an examination of meats or meat products which already at slaughter or manufacture have passed the official inspection of the Army veterinary service, Bureau of Animal Industry, or other official and competent agency.

(*c*) All meats and meat products intended for troops, including carcasses, parts, organs, trimmings, and manufactured products, should be reinspected as often as may be necessary after slaughter or manufacture on hanging floors, in chill rooms, freezers, warehouses, storerooms, also in cutting, sausage, curing, canning, rendering, or other compartments wherever products are manufactured or otherwise handled, at loading and unloading docks; on receipt at, while in storage, and at time of issue from, any establishment to ascertain if fit for human food, whether properly stamped or labeled, if false or misleading labels are used, if all inedible or rejected parts are removed, if deterioration has taken place, or if contamination, adulteration, or other objectionable conditions obtain.

2. Prepared products are meats or meat products which are cured, smoked, canned, dried, rendered, manufactured, or otherwise prepared with a view to their combination, preservation, or the improvement of their flavor or appearance. All substances and ingredients entering into their preparation should be clean, healthful, wholesome, and fit for human food. Meat products should not contain any added chemical or preservative not hereinafter approved, or any substance which might impair their wholesomeness.

(*a*) Approved dyes may be mixed with prepared fats, as lard and compound. Dyes for coloring sausage casings should not penetrate into the meat product contained therein. Substances approved for dyeing casings or to be added to prepared fats are as follows:

Annatto and tumeric.

Coal-tar colors:

Red shades—107 amaranth, 56 ponceau 3 R, 517 erythrosine.

Orange shade—85 orange I.

Yellow shades—4 naphthol yellow S, 94 tartrazine, yellow A. B., benzeneazo-b-naphthylamine, yellow O. B., ortho-tolueneazo-b-naphthylamine.

Green shade—435 light green S. F. yellowish.

Blue shade—692 indigo disulfoacid.

The numbers preceding the names refer to those of colors listed in A. G. Green's 1904 edition of the Schultz-Julius Systematic Survey of the Organic Coloring Matters. Products artificially colored should be labeled "artificially colored."

(*b*) The following are approved for adding to meat products: Common salt; sugar; wood smoke; cider, wine, malt, sugar, glucose, or spirit vinegars; pure spices; saltpeter and nitrate of soda. Benzoate of soda may be added to meat products, but such products should be labeled to show the presence and percentage amount of such benzoate of soda. Bicarbonate of soda and fuller's earth may be used in the preparation of fats, and sal soda or lime used in the cleansing of tripe provided they do not impair the quality of the meat, and are eliminated during further process of manufacture.

(*c*) Intestines, tonsils, or other inedible ingredients should not be permitted in prepared products.

3. *Stamping products.*—All meats and meat products inspected and passed under the provisions of this circular letter should be marked by the inspector at the time of inspection. Only standard inks or stamps approved by this office should be used for this purpose. Copper boxes, brushes, inking pads, and dies should be kept clean. The stamp should be inked with a sliding motion on the brush or pad and not by direct application. (See Circular Letter No. 34, Sec. V, par. 6, subparagraph 8.) Stamps when they have become unserviceable should have the lettering effaced.

(*a*) If upon any re-inspection an article is found to be other than sound, healthful, wholesome, or fit for human consumption, the Army inspection stamp should be removed or defaced and the product rejected for the use of troops. (See par. 8, Sec. V, Circular Letter No. 34.) In so far as practicable, meats or meat products derived in whole or in part from cattle, calves, sheep, goats, or swine should be refused re-inspection unless bearing marks of prior B. A. I. or Army inspection, or that of other competent agency.

4. *Laboratory examinations.*—When adulterations, fraudulent substitutions or labeling, unauthorized preservatives, inedible, deleterious, or poisonous substances, or undesirable or pathogenic organisms are suspected in meats or meat products intended for food, samples should be taken and forwarded to the nearest Medical Department laboratory for analysis. In each instance the commanding officer should be promptly informed.

(*a*) Samples of meats and products, water, dyes, chemicals, preservatives, or spices or other articles in any establishment operating under Army meat inspection should be taken without cost for chemical or technical examination as often as may be deemed necessary.

5. *Other authorities.*—The inspection and judgment of all other meats or meat products not covered herein should be made in accordance with the principles of meat inspection as contained in standard American textbooks on this subject.

B. Fresh Meats.

1. *Inspection at purchase.*—The inspection of fresh meats, frozen and unfrozen, for purchase, includes their selection, grading for quality, condition, and weight, paying special attention to specification requirements, color, soundness, covering, weighing, stamping, storage, handling, and loading.

(*a*) After slaughter, the inspector should ascertain that all inedible or rejected portions have been removed from carcasses, parts, organs, fats, and trimming, and that passed meats are thoroughly washed, drained, or dried and properly stamped. A reinspection should then be given to determine the presence of contaminations as fecal, urine, floor, pus, or from hides; hoofs, hair, scurf, foreign bodies, blood clots, bruises, abscesses, parasites, and mutilations.

(*b*) Food carcasses set aside for further examination or parts requiring treatment by chilling or refrigeration should be held apart from inspected and passed meats or products. This includes those suspected for icterus or sexual odor, fresh pork intended for consumption without cooking, and beef carcasses refrigerated for measles.

2. *Inspection at loading for shipment.*—Inspection at loading should include an examination of the dryness and cleanliness of the interior of the car, the hooks, hangers, and racks, and the state of repair of floor racks. All drain pipes should be open to prevent bunkers from overflowing, flooding the floor, and saturating meat piled on floor racks.

(*a*) Cars should be properly iced and thoroughly chilled to at least 40° F. before loading, and bills of lading and shipping orders should contain sufficient icing instructions to safely carry the meat to its destination. Cars should be properly re-iced to capacity daily, using not less than 15 per cent of salt. Beef shipped from a distance to freezers in cars improperly iced becomes slimy under the diaphragm and in the fold of the flank. Such meat spoils rapidly upon being thawed.

(*b*) In loading cars, carcasses, parts, and packages should be hung or placed to insure free circulation of air, otherwise proper refrigeration would be interfered with. Fresh sausages, pigs' feet, neck bones, spare ribs, and edible organs are more perishable than cured meats, smoked sausages, lard, and other prepared products. Perishable articles should be placed at the bottom and ends of cars where the temperature is lowest, to prevent spoilage. Fresh carcasses should be placed in the car so that they do not come into contact with the floor. Floor racks on which frozen carcasses or quarters are piled should be slatted and have 3 inches clearance from the floor. Canvas strips may be employed on car doors as an aid to retain refrigeration.

3. *Inspection on receipt.*—Fresh meat should receive a piece inspection on receipt for soundness. The condition of the interior of the car and of the hooks or hangers with regard to cleanliness should be observed. The manner in which the meat is loaded and the temperature of the car should be ascertained before the meat is removed. Evidence of apparent carelessness or neglect in regard to shipping or handling will be noted in the regular weekly report on Form 110, M. D. The surface of the meat should be examined for soiling or other evidences of careless handling. Mold, bruises, and other abnormalities should be looked for. An indication of insufficient refrigeration is a slimy condition, which is likely to appear first under the foreshank, beneath the skirt (periphery of diaphragm), in the fold of the flank, on the neck, and on cut surfaces. If beef has been placed in the car before being thoroughly chilled, it may have a wrinkled appearance. This should lead to a thorough examination, as in such cases souring or putrefaction may have occurred in the deeper parts near the bone. A meat trier should be used to detect this condition.

(*a*) When fresh meat must be held in cars until issued, the cars should be kept properly iced to capacity, using 15 per cent salt, and the doors opened as little as possible. The carcasses remaining in the car should be well spread out.

4. *Inspection of storerooms and refrigerators.*—Rooms in which fresh meat is stored should be dry and clean and kept at a temperature which will insure proper preservation. For fresh beef this temperature should not exceed 32° F., for frozen meats should not be more than 10° F., such temperatures being taken with standard registered thermometers 4 feet from the floor. Sufficient ventilation is necessary for dryness and an equable distribution of temperature. Carcasses, sides, and quarters should be hung with sufficient space between them to encourage the free circulation of air. Beef held in a cooler for any length of time may become slimy or impregnated with mold. Re-inspections should be made from time to time while in storage and on the day of issue.

5. *Frozen meat.*—Carcasses and quarters should be frozen solid before being piled. Often three weeks are required to thoroughly freeze beef after being piled when in a partly frozen condition. In order to determine if freezing has extended to the deepest tissues, a quarter should be sawed through the thickest part, or bored into with a 1-inch auger. When unfrozen tissue is reached, the auger ceases to cut. When thoroughly frozen meat is struck with an iron bar, a ringing sound is produced.

(*a*) Upon receipt of frozen meat, the inspector should observe marks of prior inspection, covering, cleanliness of the product, and give as thorough an examination as possible for evidences of diseased conditions. The examination of frozen meat as to lymph nodes and color, to be done properly, would require its being thawed out. As a rule this is not a practical procedure. In case of imported Australian beef, an examination should be conducted for "worm nests" (nodules produced by a parasitic worm, *Oncocerca gibsoni*). When frozen carcasses or parts are covered with muslin or with muslin and burlap, piece inspection is not practicable, except at final destination. However, the firmness of the meat and the condition of the surface as to dryness can be determined to a certain degree without removing the covering. When frozen meat is exposed to a comparatively high temperature, the surface thaws and becomes soft, moist, or slimy. If softness or moisture is discovered, the carcass or part should be uncovered and cut through to determine the exact condition.

C. RABBITS.

1. *Requirements.*—Rabbits or hares should if practicable have the heart, lungs, and liver hung by their natural attachments at time of examination.

2. *Partial rejection.*—*Strongylides*, *Cysticercus pisformis*, or *Cuterebra cuniculi* (grubs), when strictly localized, without evidence of acute inflammations or general impairment of the health of the animal, and localized bruises or gunshot wounds would require rejection only of parts involved.

3. *Outright rejection.*—Rejection should be made when any of the following conditions obtain: When not drawn (presence of gastrointestinal or genitourinary tracts), improperly bled, cleaned, or dressed; fecal odor, decomposition or other deteriorations; emaciation; anemia; extensive bruises or gunshot wounds; coccidiosis (*Eimeria stiedae*); *Multiceps serialis;* or the fraudulent substitution of carcasses of cats.

D. POULTRY.

1. *Requirements.*—Poultry should be undrawn and have the feet and head attached at time of inspection. Frozen poultry is inspected with difficulty. A superficial examination, while generally the only inspection given, can not be considered a thorough examination inasmuch as the internal conditions are not ascertained by such procedure.

(*a*) The inspector should determine age and the presence of impacted crop, congested or degenerated liver, rupture of the oviduct, abdominal egg concrements, contaminations or other conditions, action being taken as each individual case would require from a sanitary standpoint.

2. *Outright rejection.*—Poultry should be rejected for any of the following conditions or diseases: Sorehead (chicken-pox), contagious epithelioma or roup; chicken cholera or other septicemias; enterohepatitis of turkeys; tuberculosis, pneumonomycosis; infectious leucemia, purulent peritonitis, coccidiosis, sarcomatosis (common in fowl), cachectic or anemic conditions from any cause, emaciation, "cadaver" spots, extensive fractures, bruises or discolorations; decomposition, maggots, generalization of connective tissue, mites, severe arthritis, improper bleeding, extensive inflammations.

E. EGGS.

1. *Requirements.*—Eggs should be guaranteed by the dealer or shipper as to their freshness or condition as shown by candling. Doubtful eggs should not be accepted.

(*a*) An examination should be given the cleanliness, size, soundness of the shells, and condition of the contents of eggs. A cracked egg gives a deadened sound when tapped lightly against a sound egg. Bad eggs sometimes may be detected by shaking of the contents, by being lighter in weight than normal, by floating in water, or, as shown, by breaking.

(*b*) Eggs with damaged shells or deteriorated should be rejected. Bad eggs are held to be adulterated food. A hatch spot in itself would not render an egg inedible.

(*c*) Eggs preserved in water glass or packed in salt should receive a very thorough candling.

2. *Candling.*—Whenever necessary to determine the condition of eggs, an inspector should resort to candling. The only equipment necessary for candling eggs is a darkened room, a bright light surrounded by a shield containing a small opening of sufficient size to receive the egg.

(*a*) The inspector must be thoroughly familiar with the structure of the egg. He should hold the egg in a slanting position with the large end against the opening of the candling apparatus, giving a few moderate, rapid twists to the right and to the left sufficient to expose the entire surface of the egg, noting the size of the air cell and conditions of the white and yolk. The egg should then be turned from end to end so that the whole egg is again seen. One side of an egg may appear good, but the other side may be bad if brought into view.

(*b*) Eggs should be clean at time of candling. Cracked eggs are more accurately determined by candling. The air space in an egg increases with age, and most bad eggs have enlarged air cells. "Movable" air cells generally pertain to a stale or spoiled condition. Watery whites are usually caused by bacterial invasion. Whites may be yellow, bloody, moldy, green, or otherwise discolored, or contain foreign bodies, as blood spots, débris, or parasites due to inclusion in the oviduct.

(*c*) The condition of the yolk is an important determining factor in judging soundness; "addling" or mixing of the yolk and white, as mixed rots or white rots; incrusted yolk, yolk adhering to the shell, colored yolk, blood rings, embryos, and heavily mottled yolks may be found. Such eggs are unfit for food.

(*d*) Eggs with green whites, musty eggs, and sour eggs as a rule can not be detected by candling.

F. Fresh Fish.

1. *Requirements.*—Because of the great danger of injury to man through ingestion of putrefactive fish poisons, fresh fish should receive a very rigid inspection.

(*a*) Fresh fish should be clean, sound, free from contaminations or unauthorized chemical preservatives, and properly iced. Trucks, boxes, and paulins used should be clean. Fresh fish are firm and stiff; the drooping or not of the tail is a good criterion in this respect.

(*b*) Stale or decomposed fish may show any of the following conditions, which vary according to the extent and cause:

Scales: Easily removed, loose, bad odor, covered with slime.

Eyes: Red-bordered, sunken, cornea covered with a slimy film, disintegrating or absent.

Gills: Open or easily opened, pale, yellow, dirty, grayish-red, dark-red, or otherwise off color, bad odor, slimy.

Abdomen: Flatulent, bluish or discolored.

Meat: Soft, easily removed from bone, withered, flabby, pale, bad odor.

Body: Will not sink in water.

(*c*) When one fish is found stale or decomposed, frequently the entire lot is affected, thus requiring a very thorough inspection.

2. *Outright rejections.*—Fresh fish should be rejected when of an inedible or poisonous variety, when stale, decomposed, bloated, emaciated, affected with nematodic infestation of the musculature, myxosporidiosis, measles (infested with *Bothriocephalus latus larvæ*); fungus or bacterial diseases; or preserved with unauthorized chemicals. Due consideration should be given natural odors, if not repulsive, and pigmentations peculiar to some varieties of edible fish.

Note.—For inspection of pickled, smoked, or dried fish, see Subsection H, paragraph 6*g;* for canned fish, see Subsection I, paragraph 10*a*.

G. Oysters.

1. Oysters should be rejected when decomposed, water-soaked, or adulterated with water or copper salts. "Grass" green colored oysters, due to having been placed in a solution of copper acetate, will, upon the addition of vinegar, cause an incrustation of a metallic copper luster on an inserted iron fork or needle, and, with the addition of ammonia, become dark blue.

H. Cured Meats.

1. *Definition.*—Cured meats are meats preserved with authorized chemical substances in dry form, in solution, or in the form of smoke. Cured meats include pork products, beef, and mutton. Pickled, smoked, and dried fish will be considered in paragraph 6*g*.

2. *Inspection procedure for curing.*—The inspection of cured products includes their condition, curing, overhauling, washing, smoking, testing, and re-inspections. The inspection for purchase includes also selection as to trimming, quality, and weight, and the wrapping, packing, and strapping.

(*a*) Meats to be placed into cure should be inspected to eliminate those unsound and to see that inedible or rejected parts are removed. This would include an examination for "seedy" belly, parasitic conditions, mold, slime, abscesses, bruises, contaminations, hair, scurf, blood clots, sexual odors, icterus, deteriorations, and decompositions.

(*b*) All meats when removed from cure should be inspected for sours, slimy conditions, molds, and other deteriorations.

3. *Vats, pickle, etc.*—Vats and boxes used in curing meats or manufacturing pickle should be scrubbed with hot water and steamed. Water used in making pickle should be clean. Floor racks on which meats are laid down should be clean, and clean splash boards 3 feet high used on alleyways. The pumping needle and apparatus should be sanitary, pumping properly done, and an examination made to see that unauthorized preservatives in pickles or cures are not used.

(*a*) Fluids should not be permitted to drip into vats or onto meat. Rubbish or utensils should not be stored on meat. The pickle should be examined from time to time to determine its condition. If ropy or sour, the meat should be washed, thoroughly tested, vats or boxes thoroughly cleansed, sterilized with steam, and new pickle used. Inspection should be made at overhauling. Any meat, if only slightly soured, should be rejected.

4. *Inspection procedure for smoking.*—Meats going into smoke should be free from slime, should not be soaked to remove salt, but may be brushed or washed quickly and allowed to dry. Soda ash or caustic soda should not be used in washing. Meats should be properly spaced in the smokehouse, hanging free from the walls and from each other. Wherever pieces touch, a white spot after smoking results, which may give future trouble. Inspections should be made at the smokehouse as often as necessary to see that a proper temperature and a sufficient amount of smoke is maintained in accordance with current specifications.

(*a*) After coming out of smoke, meats should be cooled to room temperature and tried, and again inspected before packing. The hanging room should be screened, free from flies, dry, and not musty.

5. *Storage.*—A well-ventilated, dry, cold-storage room is the most suitable place for storing cured meats, especially in warm, moist weather. Damp or wet coolers favor the growth of mold. If dry cold storage is not available, the meat should be stored in a dry, well-ventilated room. Crates containing issue bacon and dry-cured hams should be stored in such a manner as to favor a free circulation of air around them, while each piece of breakfast bacon and sugar-cured hams should be hung up separately with space between. The room should be screened with screening of sufficiently fine mesh to exclude skipper flies, and the doors fitted with an automatic closing device.

(*a*) Breakfast bacon and sugar-cured hams do not keep so well as issue bacon and dry-cured hams, hence should be kept under close observation, especially in warm, moist weather, and they should receive a closer inspection. At posts and camps it is advisable that they be ordered in such quantities that they will be consumed within a month after receipt.

6. *Inspection on receipt and issue.*—All bacons and hams should be given a 10 per cent inspection on receipt and a piece inspection at issue. If any deficiency in regard to unsoundness is discovered, the entire pack or shipment should be thoroughly examined. This examination includes both a superficial and a deep inspection.

(*a*) A surface inspection would include an examination for molds, insects, and flyblows. When the growth of mold is slight and superficial, it may be removed by wiping with a cloth; if more extensive, by washing with a mixture of salt, vinegar, and water. After the latter treatment each piece should be wiped dry and, if possible, subjected to a light smoke. If the growth of mold extends beneath the surface, the product is likely to have a moldy taste, and therefore should be rejected.

(*b*) When "skippers" are present, the product should be rejected unless all the larvæ can be removed by trimming, as determined by a very careful examination, since the larvæ have a tendency to burrow deeply into the tissues. In handling "skippered" meat due regard must be had for the wonderful leaping ability of the larvæ, otherwise the infestation will spread to other pieces of meat. When meat is to be trimmed, it is a good plan to place it in ice water for a short period to render the larvæ inactive. Infested meat should be rejected outright, and recommended burned or immersed in boiling water to destroy the larvæ.

(*c*) When insects or arachnids, such as the ham beetle, larder beetle, or ham mite, or flyblows are present, their removal and the trimming away of affected portions should be recommended. Meat soiled by excreta of cockroaches is characterized by a nauseous roachlike odor which renders it repulsive and therefore should be considered unsuitable.

(*d*) In examining smoked products for sourness or rancidity, a thin steel "trier" or tester should be introduced along the bones, into the bone marrow and in the thicker portion of each product, along the line of rib attachment, and where strings have been tied. Immediately upon removal, the odor of the trier should be noted. Decomposition frequently appears first in the bone marrow, or in the connective tissue adjacent to bones. The body of hams is also a favorite place for the development of this condition. Bacon may become "spot sour"; that is, small areas may undergo souring. In the inspection of hams the trier should be inserted into the body, marrow of the aitch, or pelvic bone, and the shank. In the examination of bacon, the trier should be inserted at three or four points in the thicker portions.

(*e*) All marrow and deep body sours or off flavors, also hams having had marrow burned out, should be rejected. If small areas affected are present, their removal by trimming should be recommended and the remainder passed for food, but if a greater portion of a piece is affected, the whole piece should be rejected. Mutilated hams, or those having large, deep tears, should be rejected, as these tears readily sour and become moldy.

(*f*) Inspection of dry salt bellies should be along the same lines as for bacon issue.

(*g*) Inspection of pickled fish or dried fish, as codfish, for purchase or on re-inspection, should be made for contamination, decompositions, deteriorations, substitutions of one species or variety for another, misbranding, use of unauthorized preservative, and for diseased conditions.

I. CANNED MEATS.

1. *Inspection procedure.*—The steps involved include the examination for soundness of all ingredients used; the sanitary supervision of, and methods employed in the cutting, boning, soaking, pickling, curing, cooking, trimming, and sorting of meats; the cleanliness of cans, their stuffing, weighing, sealing, vacuum, and sterilization; testing for short vacuum, leaks, and damaged cans; examination of lacquering and labeling; and re-inspections. Temperatures employed in cooking should be observed. For purchase, this inspection includes also the selection for condition of carcasses or parts used and their weighing, and the checking and packing of the finished product.

(*a*) Cans should be clean and free from excessive moisture before filling.

2. *Inspection of ingredients.*—All meats and other ingredients intended for canning should be inspected for soundness, also to see that all inedible and undesirable parts have been removed.

(*a*) All vegetables used in canned-meat products should be fresh, of the best quality, clean and free from all inedible or undesirable parts. Onions should be unsprouted, firm, and well peeled. Potatoes should be well peeled, with all eyes, black spots, discolorations, hollow hearts, and rots removed. If frozen, sour, or otherwise objectionable vegetables are put into a meat product, the product should be rejected.

3. *Sterilization.*—Dried beef and smoked bacon are conserved in glass or tin containers without sterilization. All other canned meats which require sterilization should be sterilized the same day that the cans are filled. Defective and leaky cans detected after sterilization is complete should be rejected and not repaired or repacked unless such is accomplished within six hours after sterilization has been completed; however, if such defective or leaky condition is discovered on an afternoon run, they may be held in coolers of a temperature not exceeding 34° F. until the following day, when they may be repaired or repacked. Sterilization is considered complete within the meaning of this paragraph when the cans are sufficiently cooled for handling after coming from the retort.

4. *Inspection of filled cans.*—After sterilization and cooling, an inspection is made, and cans showing short vacuum, collapsed cans, and leakers should be rejected. Damaged cans can be removed and contents used if accomplished immediately.

5. *Lacquering.*—Cans should be dry before being lacquered. Any skips or improperly lacquered cans should be relacquered.

6. *Developing.*—Cans should be held on tables seven days before shipping, to allow any swellers to develop.

7. *Labeling.*—Unless labeled at once, cans should be marked for identification until the final label is attached.

8. *Re-inspections.*—Before being packed, cans should be thoroughly re-inspected. All leakers, swellers, and damaged cans should be rejected.

9. *Storage.*—Canned meats should be stored in a room where they will be kept dry and protected from exposure to extremes of temperature. They should not be exposed to a temperature below 34° F., because expansion of the liquid contents by freezing may spring the seams and develop leaks. If the cans have been properly lacquered and are kept dry, rusting will not occur.

10. *Inspections at purchase, receipt, issue, and storage.*—At time of purchase, whenever it is necessary to determine the exact conditions of the contents, a sufficient number of cans representing an aliquot sample of each lot presented should be opened. If any product shows evidence of decomposition, as shown by a disagreeable odor, liquefied jelly, off color, and corresponding changes in the meat, it should be rejected.

(*a*) Especial attention should be given canned lobster, shrimp, salmon, oysters, and other sea foods. Canned salmon should not be watery, mushy, decomposed, or contain skin, fins, scales, viscera, or blood clots. The date of packing should be ascertained.

(*b*) At camps or posts a 10 per cent can inspection should be made on receipt. The inspection of bacon, issue in 12-pound cans, may be limited to an examination of the cans at receipt, while in storage, and at issue to determine if the meat is properly protected, this product being placed in cans for protection and not for preservation. Defective cans should be opened and the meat inspected for soundness along the same lines as for bacon issue.

(*c*) In the inspection of bacon, breakfast, sliced, in cans, the cans should be carefully examined, and if there is any evidence of swelling or of leaks, or if nail punctures, breaks due to rust, or other defects are present, the can should be opened and the contents carefully examined. Ten per cent of the cans should be examined on receipt and a piece inspection should be made at issue.

(*d*) Re-inspections are maintained from time to time while canned meats are in storage. This is done by opening cases and examining each can. Each can should be inspected on the day of issue.

(*e*) The rejection of all leakers, swellers, and other defective cans should be recommended and some system of handling the cans should be adopted which will insure the rejected cans being kept separate from the others. Upon re-inspection of issue bacon or sliced beef, if cans are found to be expanded due to gas, yet the product is shown to be sound and wholesome after thorough aeration, rejection would not be required.

(*f*) The inspection of cans for soundness consists of an examination for leaks, including nail punctures, swellings, and other defects.

11. *Defects of cans defined.*—The following terms are in use for the various defects and for purposes of uniformity should always be used in reporting on Form 110, M. D.

Cap leak: A leak around the cap.
Vent leak: A leak at the vent. } Usually due to improper soldering.
Seam leak: A leak along one of the seams.
Body leak: A leak due to accidental cuts or rust spots in the tin.
Press leaks: A leak due to a crack or break in the tin of the body of the can, usually under the lid, due to the crimper not being properly adjusted when the lid is crimped on.
Leaker: A can into which air has entered after it was sealed.
Slow leaker: Same as leaker, except that the air enters slowly.
Sweller: A can in which gases resulting from decomposition of the contents have produced a distension or bulging of the sides and ends.
Incomplete or short vacuum: A can from which air was not entirely removed at the time of sealing.
Springer: Same as incomplete or short vacuum.
Overstuffed can: One into which an excessive quantity of the product has been introduced distending the ends and sides.
Collapsed can: One which has collapsed because of drawing too great a vacuum, usually associated with incomplete filling.
Damaged can: Other than stated above (noting cause).

12. *Recognition of defects.*—Leakers may usually be recognized by their appearance, the concavity produced in the sides and ends by the vacuum having disappeared. They may also be detected by tapping with a drumstick mallet, which will produce a hollow sound; by holding the can under water and sqeezing it; and by heating the can until the temperature reaches 100° F. in the interior and then allowing it to cool slowly, when, if a leak is present, there will be no concavity in the sides or ends.

(*a*) Swellers may be recognized by the bulging of the ends and sides and by the sound produced when the can is tapped. A bad sweller is easily detected. Slight swellers can be found by tapping the can with an instrument and noting the peculiar sound.

(*b*) Overstuffed cans resemble swellers in appearance. When overstuffing is suspected, the cans should be set aside for observation. If the appearance is due to overstuffing, no change will occur; if due to swelling, the distention will increase. An overstuffed can gives forth a dull sound when tapped with a drumstick mallet, while a resonant sound is obtained from a sweller. All overstuffed cans should be rejected.

(*c*) When a can with an incomplete vacuum is exposed to a high temperature, expansion of the contents may cause it to resemble a sweller. Such cans should be held for 24 hours at about 70° F., when the appearance will return to normal if the condition is due to an incomplete vacuum.

J. Lards, Compounds, and Oleomargarine.

1. *Inspection procedure.*—The inspection steps include the sanitary condition of the rooms and equipment, the nature, condition, and handling of ingredients used, and the sanitary supervision of the filling, weighing, crimping, labeling, packing, strapping, and storage. Inspection at receipt, while in storage, and at issue should be given the color, odor, flavor, texture, and labeling of the product.

(*a*) All hashing machines, trucks, melting kettles, tanks, rolls, pipes, agitators, or other containers or appliances used should be thoroughly clean and free from rust or dirt. "Seeding" vats should be thoroughly cleansed and steamed. Filter press cloths should be fresh and clean. Pipes used to convey different kinds of lards or compounds should be arranged to preserve the identity of each. Pumps, pipes, conductors, and fittings used to conduct milk or cream should be of sanitary construction with smooth surfaces of noncorrosive material, or coated with nickel, tin, or other approved substance, and easily cleaned. These appliances should be kept clean and sanitary. Receptacles into which lard or compound is drawn for cooling or storage should be clean and free from moisture.

(*b*) Fats to be rendered should be examined for quality, cleanliness, and freedom from offensive odors, contaminations, blood, inedible material, sourness, or rancidity. Butter prepared for use in the manufacture of oleomargarine should be made from products pasteurized at 145° F. or above for at least 30 minutes, or a momentary temperature of 180° F. as shown by accurate, standard thermometers. The butter used should be of good quality and have not more than a medium salt content, should be firm, uniform in color, sweet, clean, and wholesome.

(*c*) No lard or compound should contain adulterations or added water. Lard with moisture in it may become rancid easily. After settling has been completed, care should be exercised that water is not drawn with the lard from the tank. In the manufacture of oleomargarine, skimmings and settlings should be removed from the melted fat.

(*d*) "Tank-water sour" lard is lard containing tank water which has become sour or decomposed. Such lard should be rejected outright. It is not advisable to accept lard affected to a moderate or slight degree even after treatment by heating, cooking, repeated washing and agitation with clean hot water, settling, and drying.

(*e*) Cans should be properly cleaned and thoroughly dry at the time they are filled.

(*f*) In inspecting lard in tierces, a sample should be taken with a long trier. This sample should include the lard at the lowest point in the tierce. Lard may become rancid first on the bottom, due to moisture, if present.

(*g*) Lard should be given a 10 per cent inspection on receipt, and the contents of each container should be inspected at issue.

(*h*) Due to improper storage conditions, fatty acids may develop producing rancidity, which may be detected by the odor or taste and sometimes by the color or slick-smooth appearance. Only the upper part of a product may be rancid and the remainder sound, but sourness usually affects the entire contents of a container.

(*i*) Lard should be white and uniform in color. Dark color may indicate improper bleaching or a poor quality of fats used. Rancid lard sometimes may be yellowish or hazy dark. Inspection should also be given for adulterations, rust or dirt, mold, and coloring matter.

(*j*) The odor and flavor should be neutral and should not pertain to sourness, rancidity sweet-pickle fats, tallow, tank water, fuller's earth, scorching, or mold. If any musty odor is present, it should be determined as if due to the room, packing, or container, or if peculiar to the product.

(*k*) In texture, it should be firm, smooth, and not gritty.

(*l*) Lard substitutes should be inspected and stored along the same lines as for lard. Compounds do not keep so well as lard.

(*m*) Oleomargarine inspection is maintained for deteriorations, as rancidity, mold, undesirable odors, tastes, coloring matters, and contaminations. When inspected at time of receipt, if in tubs or tins, 5 per cent of the containers should be opened and a sample taken from each with a butter trier; if in prints, 5 per cent should be unwrapped and several cut open. The contents of each package should be inspected at issue.

(*n*) The characteristics of good oleomargarine are the same as those of butter. (See Subsec. K, par. 1*a*.) It is not always possible to detect the difference without applying a test which may be done as follows: Hold a small quantity of the product in a spoon over a flame. When oleoargarine is thus heated, the fat does not foam or boil over, while butter effervesces and foams.

2. *Storage.*—Lard should be stored in a cool dry place at a temperature not exceeding 36° F., as a high temperature favors the development of sourness and rancidity. Old lard becomes rancid, especially at high temperatures. A dry place for storage is essential because moisture encourages the development of molds. If properly handled under favorable conditions, lard should keep at least one year.

(*a*) Oleomargarine should be stored in a dry cooler at 42° to 45° F. As this product readily absorbs odors, it should not be stored with anything except butter, lard, or lard substitute. For the same reason, it should not be stored in a recently painted cooler, or in one in which the floor has been recently treated with tar, creosote, or similar substance.

3. *Action.*—Lards, compounds, or oleomargarine found to be adulterated, rancid, sour, moldy, tainted, or otherwise unsound, unwholesome, or unfit for food purposes should be rejected.

(*a*) However, at issue in camps or posts, when rancidity is found affecting a limited quantity of a product in the upper part of a container, or when mold or dirt contamination is confined to the surface of a product in tubs or tins, the removal of the rancid, moldy, or contaminated portion and the issue of the remainder may be recommended.

(*b*) When oleomargarine in prints becomes moldy, the mold is usually spread over the entire surface in small areas. In this case, the entire print should be rejected.

K. BUTTER.

1. *Classification and general characteristics.*—Butter may be classified as creamery, centralized creamery, held, renovated or process, ladles or factory, packing stock, and grease butter. Grading is generally arbitrary, such terms being used as specials, extras, standards, firsts, seconds, thirds, No. 1's, No. 2's, and No. 3's. In examining for purchase or specifications, the inspector should determine the definitions of terms, classifications, and requirements adopted by the subsistence branch.

(*a*) Butter should be fresh, sweet, of an agreeable aroma, palatable, of fine texture and grain, and should not contain adulterations or débris. It should not be too salty, have excess or unauthorized coloring matters, or excess moisture, and should be free from undesirable odors, either absorbed or original. Butter should not be stored with aromatic or odoriferous foods or substances which are likely to impart their peculiar odor or flavor to the butter.

2. *Inspection procedure.*—The examination for purchase includes the sanitary supervision outlined in Section I of this letter. The methods employed, the inspection of all ingredients, the churning, washing, salting, working, and the packing of the finished product. Churns should not be musty and should be scalded and steamed after each churning. Can tops, dippers, strainers, churn tops, separator parts, starting-can agitator and top, and butter-tub covers should never be permitted to touch the floor.

(*a*) The proper care of the raw milk or cream on the farm and its handling before it reaches the manufacturing establishment are very important. The milk or cream used in the manufacture of butter should be pasteurized, unless free from *B. tuberculosis*, as shown by tuberculin test of cattle and dairy-farm inspection.

(*b*) Cream used in making butter should be of good grade, as shown by butter-fat test. The flavor should be of good quality, as shown by the taste and smell. Cream in good condition at a creamery should not be too acid. The method of handling cream for manufacturing of butter should insure its cleanliness.

(*c*) Only approved vegetable coloring substances should be used. Undesirable bacteria should not be used in the starter. Bacteriological, acidity, salt and moisture, or other tests may be employed when necessary. Water used in the manufacture of butter should be examined as to source and purity. Salt used should be clean, white, silky in appearance, and dissolving quickly in water, and should not be dark bluish, coarse, or granulated in appearance. Magnesium chloride in salt will impart a bitter flavor to butter. Salt should be stored in a clean, dry place, free from odor.

(*d*) Butter is judged according to package, aroma, body, flavor, color, and saltiness.

(*e*) *Package.*—On receipt consideration should be given the weight, labeling, and fastenings of each container. Tubs should not be flimsy, have broken hoops or tops, dark-colored staves, soaked too much, or be discolored, dirty, muddy, or moldy. Tubs should be paper-lined. Parchment paper is usually more clean and tougher than other papers. A poor grade of liners should not be used. Liners should be folded over nicely. The top circle should be placed in proper position. Tubs should be full and not loosely packed, tops should be neat without too much salt, and the top of the butter should be evenly finished.

(*f*) Prints should be carefully wrapped, free from soiled fingerprints or evidence of being rat or mouse eaten. They may be unwrapped and, when thought necessary, cut into. A representative "plug" should be drawn from a tub by means of a small semicircular trier. The aroma should be noted immediately by smelling and should be delicate, mild, and pleasant. The butter on the outside of the plug should be examined before affected by the temperature of the room, stroking the plug with a knife to observe the color closely, noting whether even or uneven, high or low. The body and texture are noted by appearance, and the feeling to the palate, as greasy, tallowy, spongy, or sticky. The amount and condition of the brine should be noted. A part of the sample may be squeezed with the thumb to note the character of the body.

(*g*) *The body.*—Should be firm and waxy, and not weak, salvy, greasy, oily, tallowy, cheesy, milky, short grained, or loose. Moisture should not be in excess or too scant in amount, and should be properly incorporated.

(*h*) *The flavor.*—It is impossible to describe the flavors of butter. The following terms may be used in describing the flavor of good butter: Fine, high, mild, pleasant, rich, creamy, clean, sweet, or plain. The flavor may be "slightly off" or undesirable, due to absorbed odors or other conditions, such flavors being described as barny, cowy, dirty, musty, old milk or creamy, summery or wintry, tainted, weedy, fishy, sewerage, poor water or ice, flat, light, stale, strong, bitter, too acid, sour, cheesy, rancid, feverish, stable, etc.

(*i*) A "flat" flavor is found in butter made from unripened cream. Rancid refers to an undesirable, strong flavor, which is the most common defect developing in butter on standing. Other flavors which may develop on standing are turpentine, fishy, unclean, feverish, and stale. Cheesy flavor very commonly develops in butter with little or no salt and is ascribed to decomposition of protein matter. Weedy flavors are due to the condition of the milk, from cows eating especially ragweeds, wild onions, or garlic. Acid flavor is due to the improper ripening of cream. Sourness obtains to the nonremoval of buttermilk before the butter is packed. Feverish or sickening flavors are thought due to estrum of the cow or ill health, as diarrheas, etc. Stable flavors pertain to improper or unclean stable conditions, usually more pronounced during winter.

(*j*) *Color.*—Butter should be fine, even, uniform, bright, and light straw in color. It should not be wavy, streaked, variable, mottled, extremely high or low, or not of a good shade, as too reddish hue. Uneveness is the chief fault. A plug held to the light should not be cloudy or dense, but transparent or bright.

(*k*) *Saltiness.*—The salt should be fine, smooth, evenly distributed, well dissolved. It should not be gritty, fishy, irregular, poor in grade, or too high or low in content.

3. *Action.*—Rejections should be along the same lines as for lards, compounds, and oleomargarine. (See Subsect. J, par. 3.)

L. CHEESE.

1. *Classification and general characteristics.*—A cheese should be neat, clean, smooth, and attractive, the rind covered with a closely fitting bandage, and should have a square edge. When cut, it should show a close, solid, uniformly colored interior. It should have a clean, mild aroma, a desirable flavor, and a mellow, silky, meaty texture, smooth and free from hard particles. It should not be rancid, harsh, or show visible or separated moisture or fat.

(*a*) The following defects in finish may occur: Unclean or moldy surfaces, dirty cheese; greasy, checked, or improperly closed rinds; cracked rinds or cheese, cheese uneven in size, undersized, with high edges, crooked; or bandage imperfections, as wrinkled, too long or too short at one end, torn, or loose from cheese.

2. *Inspection procedure.*—Inspection for purchase includes the same sanitary requirements as for butter. Rennet or pepsin extracts should be handled in a sanitary manner. Bacteriological, acidity, salt, moisture, and other tests may be employed when necessary. A supervisory inspection should be given all processes used in ripening the milk, setting the starter, cutting, draining, working, molding, or other manipulation, the salting, curing, storing, and boxing of the finished product for shipping.

(*a*) A cheese trier 5 to 6 inches in length, having a suitable handle, semicircular in shape, one-half to three-fourths of an inch in diameter, with sharp edges and end, should be inserted in a slanting manner into the top of the cheese toward its center, then turned around and withdrawn, removing a plug or cylinder of cheese. When inserting the trier, old trier holes should be avoided and consideration given to spoiled, moldy, or soft places in the cheese. Samples may vary in different parts of the same cheese. A perfectly close, compact cheese will draw a solid or "candle" plug, an open or loose cheese, only a partial plug.

(*b*) As soon as the plug is removed, it should be passed quickly under the nose to detect any volatile odors. The color and openness of texture should be noted. A plug from a well-made cheese can be bent sometimes in a half-circle without breaking. It breaks gradually and shows a torn surface, meaty or fibrous texture, and has a color slightly translucent, like amber, whether it is colored or not.

(*c*) Cheese which is brittle breaks suddenly, is inelastic, and will not bend. This is a condition generally due to too much acid, in which case it has a dead white, chalky, or faded color, and a strong acid or sour taste. About 1 inch of the outer end of the plug should be replaced into the trier hole to prevent molds or insects entering the cheese, and the remainder of the plug saved for further examination.

(*d*) Cheese is seldom tasted to detect flavor. After tasting five or six samples, the sense of taste usually fails to differentiate further. As a rule, a bitter flavor can not be detected by the nose, but must be tasted; almost any other defect in flavor can be observed by smelling. Part of the plug should be kneaded in the hand and the odor noticed. When cheese is mixed and thoroughly warmed, the odor becomes more pronounced.

(*e*) "Body" refers to the cheese as a whole, "texture" to arrangement of the parts of a whole. Firmness of body and smoothness of texture are determined by working and rubbing a sample of cheese in the hand for a few minutes.

(*f*) *The body and texture.*—Should be smooth, close, waxy, and silky. Defects noted are loose, pasty, greasy, curdy, mealy, lumpy, corky, acidy, weak, gassy, watery, yeasty, or too dry.

(*g*) Loose or open cheese is filled with irregular-shaped holes and is usually soft and weak-bodied.

(*h*) A gassy-textured cheese has a spongy texture, with a large number of very small "pin" holes, or slightly flattened "fish-eye" openings throughout. The cheese may puff up, have rounded edges, assume a somewhat spherical form, and crack or break open. This may be due to certain microorganisms gaining entrance through unclean handling, or dirty milk.

(*i*) A cheese may be dry, hard, firm, corky, or rubbery; the same does not mold waxy.

(*j*) An acid cheese may appear mealy, crumbly, faded, and sour to the taste, or may be pasty, soft, and sticky, sometimes caused by too much moisture. A weak cheese may be close boring, yet soggy; usually appears in cold weather and with increased richness of milk. An acid cheese is bleached or faded, due to too much acid.

(*k*) Greasy cheese is indicated by free butter fat between particles of curd which are not cemented together.

(*l*) *The flavor.*—Should be fine, nutty, and have a pleasing acid taste. Defects are as follows: Tasteless, too mild, too acid, bitter, rancid, or tainted, including those due to feed, as turnip, cabbage, decayed ensilage, certain weeds, or green feeds; those absorbed by milk from unclean stables; yeasty or fruity odors from unclean cans, indicated by a fermented whey or a fruit smell and somewhat "sick" taste; fishy, odor of old milk or dirt.

(*m*) *The color.*—Should be uniform, even and slightly translucent, and not streaked, mottled, wavy, contain white specks or rust spots, acid, too high or too low.

(*n*) A mottled cheese has variegated markings or a spotted, uneven color, and is most noticeable in colored cheeses.

(*o*) In a seamy cheese, the outline of each piece of curd may be seen.

(*p*) Cheese absorbs foreign flavors and odors readily, and should be stored separate from volatile or odoriferous substances.

3. *Action.*—Cheeses should be rejected when rancid, tainted, contaminated, "puffed up" due to bacterial invasion, moldy, infested with parasites or otherwise unsound; and when undersirable ingredients are used in their manufacture, including infected or contaminated milk, adulterants, and unauthorized coloring matters.

M. SAUSAGES AND OTHER PREPARED PRODUCTS.

1. *Inspection procedure.*—A supervisory inspection should be given all processes and manipulations. Meats and other ingredients entering into products should be fresh, sound, and wholesome. Sausage should not contain cereal in excess of two per cent. Water or ice should not be added to sausage except to facilitate chopping, grinding or mixing and in such cases should not exceed 3 per cent, except smoked or cooked sausages, such as Frankfort, Vienna, or Bologna style, may contain more than 3 per cent added water, but not in excess of an amount necessary to make the product palatable.

(*a*) For restrictions imposed on pork products customarily eaten without cooking, see Section III, Subsection E, paragraph 3*g*.

(*b*) Blood should not be used for food purposes unless it is fresh, sound, derived, from animals free from disease, and is collected and handled in such a manner to prevent contamination. (See Sec. III, Subsec. A, par. 1.)

(*c*) The only animal casings permitted for use as containers are those from inspected and passed cattle, calves, sheep, goats, and swine. These casings should be carefully inspected to see they are washed and thoroughly flushed with clean water, are suitable, clean, and free from nodules. Casings showing infestation with esophagostomum or other nodule-producing parasite, and weasands infested with the larvæ of *Hypoderma lineata* should be rejected, unless the infestation is slight, when the portion affected only need be removed and rejected. Before beef casings are used as sausage containers, the mucous membrane of the ileocecal valve and the portion of the intestinal wall adjacent should be removed, or the casing so divided and tied that none of the surface covered with mucous membrane is actually used as a container.

(*d*) The fermenting and sliming of casings should be done only in compartments separate from all other rooms. Casing containers should be clean. Casings stored in a high temperature are liable to become slimy.

(*e*) Sausages should be properly cooked and smoked. When dyes are used, sausages should be examined to see that the dye has not colored any of the meat products within the casings. Water on dyes should be changed daily. The room in which sausage is hung should be dry and free from mustiness.

(*f*) Sausage prepared or packed in oil should be heated to a temperature of at least 160° F., and this temperature maintained within the can for at least 30 minutes. Cans should show good vacuum.

(*g*) Cattle paunches or hog stomachs intended to be used should be thoroughly washed immediately after being emptied of their contents. In the preparation of tripe, all fats should be removed as they are more or less dirty. In cleaning tripe, plenty of water should be used, the inner surface being brushed thoroughly. After fermentation or sweating, all foreign material should be removed with scrapers. If sweated too long or not allowed to cool properly, souring may occur. The clothing of all employees in the tripe room should be changed frequently as they become very dirty.

(*h*) Heads to be used in food products should be split and have the bodies of the teeth, the turbinated and ethmoid bones, ear tubes, and horn butts removed, then thoroughly cleaned.

(*i*) Detached kidneys should be sectioned, soaked, and washed, and inspected for pathological conditions, parasites, deteriorations, and contaminations.

2. *Action.*—Sausages or other miscellaneous meat products should be rejected when flyblown, maggot-infested, rat or mouse eaten, or otherwise contaminated, when the meat is artificially colored, off color or discolored, moldy, containing adulterations, an excess of cereal or moisture or unauthorized preservatives, when improperly prepared or labeled, when tainted, soft, friable, slimy, smeary, sour, stinking, or otherwise decomposed, deteriorated, unsound, or unwholesome.

(*a*) For proof of deterioration or putrefactive process, the color, consistency, odor, taste, and resistance should be taken into consideration. These, however, vary greatly, and their detection must depend to a large extent upon the subjective perception by the inspector.

V. INSPECTION OF DAIRIES AND MILK HERDS.

1. The veterinary officer making examinations of dairy farms or milk herds should investigate and report on the sanitary conditions pertaining to barnyards, barns, milk house, utensils, employees, methods of milking, handling of milk, and the health of the dairy animals. Reports covering each inspection made should be securely attached to the meat inspection return, Form 110, M. D., for the week in which the inspection was made (Circular Letter No. 34, Sec. VII), and should include data under the following headings:

2. *Barnyard.*—Suitability of location and surroundings, the drainage and freedom from manure and rubbish.

3. *Barn.*—Suitability of location and surroundings and the drainage.

(*a*) *Construction.*—Suitability of construction, facilities for cleaning and state of repair of floor, gutter, tie, manger, walls, partitions, ceiling. Floors and platforms on which animals stand should be water-tight, made of nonabsorbent material and properly graded and drained; manure gutters of nonabsorbent material, of sufficient width, depth, and pitch to afford proper drainage, with suitable connections to outlet, ceilings, and walls of such construction as to be readily cleaned;

all doors and windows properly screened. If the space above the animals is used for forage, the ceiling should be of tight construction to prevent dust and chaff from falling through. A direct opening from the silo or grain pit into the milking room is undesirable.

(*b*) *Ventilation.*—System and efficiency of ventilation. At least 600 cubic feet of air space should be provided for each animal, with proper circulation.

(*c*) *Light.*—System and adequacy of lighting. At least 2 square feet of window light to each 600 cubic feet of air space, and properly distributed, is the minimum requirement. Window panes should be kept clean.

(*d*) *Lavatory and privy or toilet facilities.*—Location, construction, and cleanliness; disposal of waste. When an outhouse is employed, it should be of a cement-box type with hinged seat lids, automatic closing door, and absolutely fly proof. The surface discharge from a water-closet should be of sufficient distance from the cow barn and milk room to prevent fly-borne infection. Adequacy and convenience of supply of hot and cold water, soap, and towels.

(*e*) *Cleanliness.*—Methods of cleaning and cleanliness of floors, walls, ceilings, ledges, mangers, partitions, windows. Ceilings, walls, and ledges should be thoroughly swept and kept free from dirt and cobwebs. Manure should be removed from the barn at least once daily, and twice daily when animals are confined to the barns, and one-half hour before milking, the floors being swept and kept free from dirt and all organic matter. Whenever practicable, running water should be used to flush floors and gutters after cleaning. Such cleaning should not be done during the milking period or within one-half hour prior to the same. Manure should be removed to a safe distance from the barn and milk house, and stored in a place not accessible to the dairy herd, or otherwise disposed of in a sanitary manner, and never stored, even temporarily, within 100 feet of the barn or milk room. All liquid matter should be removed daily, and not allowed to overflow or saturate the ground in or adjacent to the stable or milk house. Straw, hay, feed, farm utensils, wagons, stable implements, or other undesirable materials should not be stored in that part of the barn where the milking herd is maintained.

(*f*) *Water supply.*—Quantity and quality of water supply for animals. Individual drinking basins, watering troughs and tanks, when used, should be drained and thoroughly cleaned two times a week, and when necessary.

(*g*) *Forage and bedding.*—Suitability and cleanliness. Only forage of good quality and free from dirt, mold, decomposition, or putrefaction, should be given. Dry forage should not be fed just prior or during milking, owing to the dust occasioned by its distribution in the mangers. Bedding should consist of such materials as shavings, straw, fodder, or dry leaves, which is clean, dry, and absorbent. Horse manure should not be used. Feed boxes, mangers, feeding floors, and feed racks should be kept free from dust and rubbish.

(*h*) *Exclusion of other animals.*—Horses, mules, dogs, cats, poultry, or other animals than cows should be excluded from such stable (calves and bulls, if kept clean and sanitary, may be allowed in the same room); rats and other vermin should be eliminated.

(*i*) *Grooming and exercise.*—Each cow in a herd should be groomed daily. The legs, flanks, tail, udder, and venter or belly surfaces should be free from manure, mud, or other filth during milking; long hairs should be clipped from the udder and flanks, and the hair on the tail cut so that the brush is well above ground. Dairy cows should be turned out for exercise at least two hours a day in suitable weather. Exercise yards should be free from manure and other filth.

(*j*) The sanitary requirements of a separate building or room used for milking purposes are analogous and equally applicable to those of a stable wherein cows are milked.

4. *Milk house.*—Suitability of location and surroundings and the drainage. It should be separate from the stable and dwelling and located a safe distance from and on a higher level than the hogpen, manure pile, and privy. It should be kept clean and should not be used for purposes other than the handling and storing of milk and milk utensils.

(*a*) *Construction.*—Suitability of construction, facilities for cleaning, and state of repair of floor, walls, and ceiling; screening of apertures; system and efficiency of ventilation; system and adequacy of lighting. It should be of good construction, properly screened, and should be kept free from flies and vermin. The floor should be of nonabsorbent material and well drained. It should contain ample facilities for cooling milk to less than 60° F., and wherever possible to 50° F., or less.

(*b*) *Cleanliness.*—Methods of cleaning and cleanliness of floors, walls, and ceilings.

(*c*) *Water supply.*—Quantity and quality of water used for washing utensils. Adequate supply of hot water is necessary. Water should be absolutely pure, sufficient in amount, protected against flood or surface drainage, and conveniently located. Privies, hogpens, manure piles, and all other possible sources of contamination should be eliminated. Whenever considered necessary, samples of water may be submitted for laboratory examination.

(*d*) *Aerator.*—A properly constructed aerator of suitable capacity for the reduction of the temperature of milk to 60° F. should be used, and whenever possible to 50° F., or less. It should be conveniently situated, protected from flies, dust, and odors, and never used in the barn or out of doors. Milk should be passed over this aerator immediately after being drawn. Cans should be tightly covered, securely wired, and sealed. The use of loose, perforated, broken, worn, or poorly fitting lids should be forbidden.

5. *Equipment and utensils.*—Adequacy, suitability, and repair of all equipment and utensils. Utensils should be of such construction as to be easily cleaned. A small-top milking pail should be used, made of heavy, seamless tin, or with seams which are flush and made smooth by solder. Wooden pails, galvanized-iron pails, or pails made of rough, porous materials are insanitary. Rusty, leaking, or broken cans; broken, perforated, or badly fitting lids; and all other utensils which would be dangerous receptacles for milk should be rejected by the inspector.

(*a*) *Strainers.*—Several strainers should be provided, in order that they may be frequently changed during the straining of milk.

6. *Cleanliness of equipment and utensils.*—Facilities and methods of cleaning and sterilizing and cleanliness of equipment and utensils. After each milking, all utensils, including bottles, should be thoroughly cleaned, Utensils should be rinsed in cold water, washed in hot water, to which may be added soap or other alkaline substance, then thoroughly rinsed in boiling water and inverted in a clean place, free from dust, flies, and obnoxious odors. Utensils may be subjected to live steam after washing.

(*a*) Filter cloths and strainers should be thoroughly washed, scalded, and dried after each time used.

(*b*) *Milking machines.*—Milking machines should be taken apart after using and thoroughly cleaned and sterilized, particular attention being given to metallic and rubber tubing and teat cups, which should be immersed in a chlorinated lime 1:1000 solution between milkings.

7. *Employees.*—Number, suitability of dress, cleanliness of hands and person, appearance as to health of employees.

(*a*) *Garments.*—Clean outer garments should be worn during milking and used for no other purpose. When not in use, they should be kept in a clean place.

(*b*) *Personal cleanliness.*—Hands of milkers should be thoroughly washed with soap, water, and brush, carefully dried on a clean towel immediately before milking. The practice of moistening the hands with milk should not be tolerated. Hands, fingers, lips, or tongue should not come into contact with milk. All other milk handlers should be clean in clothing and person. Employees should not be allowed to expectorate upon the walls or floors of the stable or milk house, or into water used for cooling or washing purposes.

(*c*) *Health.*—What efforts have been made to insure freedom of milkers and milk handlers from comunicable disease? The presence of carriers of typhoid and other human diseases should not be overlooked. Are employees required to report existence of communicable disease in their homes?

8. *Milking and handling of milk.*—Udders and teats should be cleaned before milking by being brushed, then wiped clean with a cloth and warm water, never by means of milk. Hands should be clean and dry and contact avoided with unclean objects of any kind. In passing the rear of animals, the milk pail should be carried on the side of the body farthest away from the animals. The milking should be done rapidly and quietly, and the cows treated kindly. Teat cups of milking machines should not be permitted to fall into the bedding or onto the floor whenever they become detached from the teats. The first streams from each teat should be rejected because of containing large numbers of bacteria.

(*a*) Milk from all cows should be excluded for a period of 15 days before and 5 days after parturition.

(*b*) If the milk from any cow is bloody, stringy, or of other unnatural appearance, the milk should be rejected and the cow isolated until the cause of such abnormal appearance has been determined and removed.

(*c*) *Straining.*—Milk should be strained through at least a double thickness of finely meshed cheesecloth or gauze or filter cloth. Cotton strainers should be used whenever practicable.

(*d*) *Storage.*—Milk from each cow should be removed promptly from the stable or milk room, and immediately cooled to at least 60° F., then properly stored below 60° F. A temperature of 50° F. or less should be employed wherever possible.

(*e*) Each bottle or can of milk or cream should be labeled before leaving the dairy farm.

(*f*) *Transportation.*—All wagons used in transportation of milk or cream to receiving stations or railroad shipping stations should be covered and kept clean at all times. Suitable provisions should be made to keep the milk cool to 50° F., or below, during such transportation.

9. *Diseases of cows as affecting fitness of the milk for consumption.*—A thorough physical examination should be given all animals on each dairy farm, supplemented, when necessary or desirable, by laboratory or other examination.

(*a*) Milk should be rejected from cows affected with tuberculosis, cowpox, foot-and-mouth disease, rabies, anthrax, actinomycosis, mastitis, trembles, infectious abortion, retained secundinæ, gangrenous pericarditis or pneumonia, septic or hemorrhagic enteritis, septic metritis, diarrhea, or any other disease or condition with marked systemic disturbance with suppurating wounds, ulcerative or phlegmonous inflammation, or undergoing medicinal treatment; when the milk is bloody or contains colostrum; when milkers or handlers are affected with communicable disease or when insanitary conditions pertaining to the construction and location of the establishment or the equipment and methods of handling the milk do not insure a clean and wholesome product.

(*b*) Diseased animals should be removed from a herd and placed in strict quarantine, and in case of infectious disease, the State authorities should be notified. (See par. 87¼ S. R. 70, C. No. 1.) The milk from such cows should not be used, nor should any animal be restored to a herd until permission has been given by the veterinarian after a rigid examination.

(*c*) Barns and premises in which diseased animals are found should be quarantined, and such prophylactic, cleaning, disinfecting, or other control measures instituted as are necessary to prevent spread of the disease.

10. *Tuberculin testing.*—It is desirable to limit the milk supply to animals which have successfully passed the tuberculin test whenever conditions will permit. The difficulty of enforcing this requirement over a large territory is apparent but is not felt to be a reason for its omission. Much can be accomplished through cooperation with the State or municipal officials. As any cattle which may react are usually to be disposed of under the laws of the State in which they are tested, the method of testing which is recognized by the authorities of such State should be used. Likewise, the results of tests made by official civilian agencies should be acceptable to the military authorities unless manifestly unreliable. If a choice of tests is permitted, either the subcutaneous or intradermal method should be used, that method being selected with which the veterinarian has had the most experience and which is best suited to local conditions.

(*a*) If the subcutaneous test is used, at least three temperature measurements should be taken at intervals of two hours before the tuberculin is injected. The tuberculin should be injected between 6 and 9 p. m. Temperature measurements should be resumed at the eighth hour following the injection and should be continued at intervals of two hours until the twenty-second hour in all animals; and, in those in which the temperature is rising at the twenty-second hour, but which have not given a definite reaction, the temperature measurements should be continued at intervals of two hours until a definite reaction occurs or the temperature begins to fall.

(*b*) If the intradermal test is used, the observations should be made at the twenty-fourth, forty-eighth, and seventy-second hours after the injection, if possible. If only one observation is practicable, it should be made at the seventy-second hour.

(*c*) Barns in which reactors are found should be cleaned and disinfected after the latter are removed, and owners concerned should be advised not to add any cattle to their herds which have not passed a satisfactory tuberculin test. Herds in which a considerable percentage of the cattle react should be re-tested within six months; others in one year.

(*d*) Complete reports covering each physical examination and tuberculin test of animals, with copies of test charts, and a detailed statement of all control measures taken regarding exposed or diseased dairy animals should be furnished this office.

(*Cir. Letter No. 40, Veterinary Division, Surgeon General's Office, Aug. 25, 1919.*)

Instructions for the Use of Forms 101 and 112.

1. Lack of uniformity in the rendition of Forms 101 and 112 is apparent and demonstrates the need of detailed instructions.

2. *Form 101.*—(*a*) The title of this form is misleading. It is to be prepared not only by the veterinarian of an auxiliary remount or remount depot but also by the veterinarian of any organization or command from which one or more animals are sent by issue, turn in, or exchange to another depot, organization, or command where they will come under the jurisdiction of a different veterinarian. Consequently it is not required in case of transactions between two organizations of the same camp or station under the supervision of a single veterinarian. The principle involved is that of a health certificate, in which necessary information is conveyed from the veterinarian of the point of issue to the veterinarian of the point of receipt. In the case of animals shipped by purchasing boards, Form 109 is used instead of Form 101. (Par. 68, S. R. 70, C. No. 1.)

(*b*) The veterinarian of the organization or command at place of issue will prepare the required number of copies of this report as far as the line of asterisks, in the case of each animal or lot of animals issued, turned in, or exchanged at one time. A separate set is required for each receiving organization. Exchanges of sound for sick animals are to be reported as issues. The exchange of a sound animal at an auxiliary remount depot for a sick one from the camp will, therefore, require the preparation of two sets of Form 101—one by the depot veterinarian and one by the veterinarian of the organization from which the animal comes.

(*c*) The mallein test will be made as provided in the second section, paragraph 54, S. R. No. 70, C. No. 1 (see also pars. 4, 5, and 14, Circular Letter No. 28), and the report will show the date of its last application, by whom, kind, which eye was used, and the result. If, by reason of military necessity, animals untested within 21 days are issued, turned in, or exchanged, this fact will be stated, showing the exact or approximate date of last test with the above information, when obtainable, together with an explanation of the military necessity.

(*d*) Under remarks should be noted facts regarding exposure to communicable diseases and other information which will be of assistance to the receiving veterinarian in protecting the health of these and other animals. In the absence of remarks to the contrary, all the animals when issued are assumed to have been sound and free from any menace to other animals.

(*e*) The original and one copy of the report signed by the veterinarian of the organization or command at the place of issue will be forwarded by the most expeditious route to the veterinarian of the receiving organization or command, and one copy will be retained. The report will be placed in the care of an attendant when one is assigned. If the issuing organization pertains to a division or other command having a senior veterinary officer assigned, the report will be forwarded through such senior officer or officers. For example, if the animal comes from a divisional organization to which a veterinary officer is assigned, the latter will forward the report through the division and the camp veterinarians, respectively. In case it is known that there is no veterinary officer at the station to which the animals are issued, the veterinarian of the point of origin will forward both copies to the Surgeon General.

(*f*) The veterinarian of an organization or command at the receiving place will immediately, upon arrival of the animals, complete both copies of the report, sending the original to this office and retaining the copy. He will forward the report through the same channels as indicated in subparagraph (*e*) above, in order that camp or station veterinarians may always be in touch with communicable disease conditions of the entire command.

(*g*) Under disposition and remarks the veterinarian of the receiving organization or command will note the physical condition of the animals upon receipt, whether they are placed in quarantine (first section, par. 54, S. R. No. 70, C. No. 1), the nature and efficacy of such quarantine, and any other information which may demonstrate whether proper measures have been taken to prevent the transmission of communicable diseases. All such animals should be under the daily observation of the veterinarian until sanitary requirements have been met in full.

(*h*) Forwarding indorsements should be placed on the back of the second and third fold. Reports to or from stations under department commanders should pass through the office of the department surgeon in all cases.

3. *Form 112.*—(*a*) This form was originally designed for shipments of animals received at auxiliary remount depots (par. 59, S. R. No. 70, C. No. 1) and is essentially a shipment report. It will continue to be so rendered, the veterinarian utilizing all sources of information to complete the required data. Under the provisions of paragraph 28, S. R. No. 70, C. No. 1, it is also used to report shipments of animals sent direct from the place of purchase to organizations other than depots. Likewise, when a considerable number of animals (10 or more) not on sick report are turned in on foot from a local organization, this form will be used. Smaller lots turned in and sick animals received will not be so reported. With the exceptions above noted, all animals received at remount

and auxiliary remount depots from any source whatever will be reported on Form 112, and its use in other cases will cease. In completing this report notation should be made, under the heading of "Condition received," covering data required by subparagraph (*g*) above, and under heading of "Mallein test" should be noted the information called for in subparagraph (*c*) in so far as the facts are obtainable without delaying the immediate transmission of the form. The original copy of the report will invariably be forwarded to this office.

4. All former instructions conflicting with the provisions of this circular letter are rescinded.

(*Cir. Letter No. 41, Veterinary Division, Surgeon General's Office, Nov. 10 1919.*)

Weekly Telegraphic Report on Public Animals.

1. In compliance with Circular No. 493, W. D., 1919, the weekly telegraphic report on public animals from the stations listed below will in future be forwarded by special delivery mail. In order that the arrival of these reports in this office be not delayed, it is imperative that they be placed in the mail on Friday noon of each week. This report will continue to be designated as heretofore. (See Circular Letter No. 38.)

2. In the event of an unusual or alarming occurrence of communicable diseases, the veterinarian may, in his discretion, make the report by telegraph.

Camp Benning.
Camp Bragg.
Camp Custer.
Camp Devens.
Camp Dix.
Camp Eustis.
Camp Gordon.
Camp Gordon, A. R. D.
Camp Grant.
Camp Grant, A. R. D.
Camp Humphreys.
Camp Jackson.
Camp Jackson, A. R. D.
Camp Knox.
Camp Lee.
Camp Lee, A. R. D.
Camp Meade.
Camp Meade, A. R. D.
Camp Merritt.
Camp Sherman.
Camp Taylor.
Camp Taylor, A. R. D.
Camp Upton.
Fort Benjamin Harrison.
Fort Ethan Allen.
Fort Jay.
Fort Myer.
Fort Monroe.
Fort McPherson.
Fort Oglethorpe.
Aberdeen Proving Ground.
Air service depot, New York.
Army supply base, Norfolk.
Attending veterinarian, Washington.
Edgewood Arsenal.
Front Royal, remount depot.
Port of embarkation, Charleston.
Raritan Arsenal.
West Point, N. Y.

(*Cir. Letter No. 42, Veterinary Division, Surgeon General's Office, Dec. 4, 1919.*)

Monthly Return of Enlisted Veterinary Personnel, Form 47, M. D.

1. Beginning January 31, 1920, the monthly return of enlisted personnel, Medical Department, Veterinary Corps, heretofore rendered on Form 47a, M. D., will be rendered bimonthly on Form 47, Medical Department. This return will be prepared in conformity with the instruction thereon and will be forwarded through the same channels as form 47a.

2. Men who entered the service for the period of the emergency will be indicated by (X) before their names in the margin of the return.

3. Form 47a will be rendered for the month of December, 1919.

4. Your attention is invited to the necessity in complying with paragraph 45, M. M. D., which requires that changes of status reports be rendered promptly.

(*Cir. Letter No. 43, Veterinary Division, Surgeon General's Office, Dec. 17, 1919.*)

Enlisted Veterinary Personnel.

I. AUTHORITY.

1. As a temporary expedient to provide for the absolutely necessary veterinary service in the Army until such time as a permanent enlisted force is provided for this corps through necessary legislation, an enlisted force has been provided in G. O., No. 127, as follows.:

GENERAL ORDERS }
No. 127. }

WAR DEPARTMENT,
Washington, November 17, 1919.

IV. *Enlisted personnel, Veterinary Corps.*—(1) Under authority contained in that portion of section 10 of the act of Congress approved June 3, 1916 (Bull. No. 16, W. D., 1916), which authorizes the Secretary of War in time of actual or threatened hostilities to enlist or to cause to be enlisted in the Medical Department such additional number of men as the service may require, the following additional strength is authorized for the Medical Department:

Master hospital sergeants	7
Hospital sergeants	8
Sergeants first class	45
Sergeants	150
Corporals	75
Cooks	60
Horseshoers	30
Stable sergeants	300
Saddlers	15
Mechanics	30
Privates first class	645
Privates	135
Total	1,500

(2) The personnel so authorized will be enlisted in the Medical Department, but will be assigned to duty with the Veterinary Corps. This personnel will include all men heretofore enlisted and assigned to the Veterinary Corps under the provisions of Circular No. 141, War Department, 1919, as amended by Circular No. 268, War Department, 1919.

(3) Within the limits of the authorization in paragraph (1), Veterinary Corps personnel will be organized and assigned to duty by the Surgeon General in accordance with the needs of the service. This authority will be construed as permitting the Surgeon General to organize such units and detachments of the type heretofore approved as he may deem necessary without further reference of the matter to higher authority: *Provided*, That the strength of units and detachments forming a part of combatant organizations shall conform to that indicated in approved tables of organization and War Department orders. The Surgeon General will be prepared at all times to render a report showing the actual distribution of the authorized personnel.

[320.2, A. G. O.]

By order of the Secretary of War.

2. This order is regarded as establishing an enlisted Veterinary Corps in the Medical Department replacing the enlisted Veterinary Corps authorized by G. O. 130, W. D., 1917; consequently the provisions of section 4, G. O. 58, W. D., 1918, are no longer applicable in the matter of promotions and reductions.

3. Circular Letter No. 7, revised July 15, 1918; Circular Letter No. 13, revised August 14, 1918, section 2, Circular Letter No. 25, and the last three sentences of paragraph 3, Section III, Circular Letter No. 34, all from this office, are hereby rescinded. Since Tables of Organization No. 411 no longer governs the organization of camp headquarters (A. G. O., November 19, 1919, 320.2 Camp Dodge, Misc. Division), paragraph 3, Section III, Circular Letter No. 31, is hereby rescinded.

11. APPOINTMENTS, PROMOTIONS, AND REDUCTIONS.

1. In view of the temporary nature of this organization, appointments, promotions, and reductions will be made in accordance with the regulations hereinafter prescribed.

2. Master hospital sergeants are appointed by the Secretary of War on the recommendation of the Surgeon General, and appointments in all other grades above that of private are made by the Surgeon General, except that in the Philippine, Hawaiian, and Panama Canal Departments and the American Forces in France, Germany, and Siberia, appointments in the grade of sergeant, stable sergeant, corporal, private first class, and in the special grades are made by the department veterinarian or chief veterinarian.

(*a*) All appointments must meet the eligibility requirements for the respective grades as to prior service specified in fourth section, paragraph 1405, A. R. (C. A. R, Nos. 29 and 46), and as to marriage state in paragraph 34, M. M. D. (C. M. M. D., No. 1).

3. Applications for examinations for appointment in the grade of master hospital sergeant, hospital sergeant, and sergeant first class, in all cases, and in the grade of sergeant, stable sergeant, and corporal, and recommendations for appointments to the grade of private first class and the special grades in the case of men serving within the continental limits of the United States will be forwarded to the Surgeon General direct from commands under the immediate supervision of the War Department and through the department surgeon from commands under department commanders. No person will be designated to take the examination for appointment to a noncommissioned grade until the written authority of the Surgeon General has been obtained, except that applications for appointment in the grades of sergeant, stable sergeant, and corporal and recommendations for appointment to the grade of private first class and the special grades from men serving in the Philippine, Hawaiian, and Panama Canal Departments and the American forces in France, Ger-

many, and Siberia will be forwarded only to the department veterinarian or chief veterinarian who is authorized to act thereon.

(*a*) No person will be designated to take the examination for more than one grade at the same time.

(*b*) No application for examination for appointment in any noncommissioned grade will be submitted until the date of holding such examination is announced.

4. The grade of farrier is no longer authorized, having been replaced by that of stable sergeant. Veterinarians formerly authorized under G. O. 58, 1918, to appoint farriers will reduce all farriers in their respective detachments as of the date of receipt of G. O. 127, W. D., 1919. They are hereby authorized to immediately appoint as stable sergeants as many of the men so reduced as possible without exceeding in any detachment the number of stable sergeants authorized in Section IV, paragraph 1*f*, of this letter. Since many detachments contain more farriers than there are now authorized stable sergeants, not all the men reduced can receive appointments in the latter grade. Care should be taken to select only those best qualified. If none of the men reduced are considered qualified for appointment as stable sergeants, no other enlisted men will be so appointed and the vacancies will remain unfilled until the official examinations are held. Such appointments are tentative and may be continued, as long as satisfactory services are rendered, until the qualifications of the appointees are determined by examination as hereinafter prescribed, when the appointments of those who qualify will be confirmed by the issue of warrants (Sec. III, par. 2) and those not qualified will be reduced. Examinations will shortly be announced. It is contemplated that the authorized vacancies caused by the reduction of farriers as above described will be filled by the tentative appointment of stable sergeants immediately after the receipt of these instructions and that thereafter veterinary detachment commanders will make no further appointments of stable sergeants, nor will they fill any vacancies in that grade which may subsequently occur.

(*a*) The grade of wagoner is no longer authorized. Veterinarians formerly authorized under G. O. 58, 1918, to appoint wagoners will reduce all wagoners in their respective detachments as of the date of receipt of G. O. 127, W. D., 1919. Recommendation for the appointment of the same men as mechanics should be forwarded the same day provided they fully meet the requirements for this grade laid down in paragraph 7*c* of this section.

(*b*) In each case of the reduction of a farrier or wagoner or the tentative appointment of a stable sergeant as authorized hereinabove, a written order will be issued stating the date upon which the grade takes effect and filed in the detachment records. All such appointments and reductions must be promptly reported with date effective.

5. The examination of master hospital sergeants, hospital sergeants, sergeants first class, sergeants, stable sergeants, and corporals will be conducted by boards of veterinary officers and will be held simultaneously at all stations at such times as may be designated by the Surgeon General. All examinations will be both oral and practical, and will embrace the same subjects for all grades. The higher the grade the more difficult the examination. The examination for master hospital sergeants, hospital sergeants, and sergeants first class will, in addition, be written. The questions for the oral and written examinations will be prepared in this office.

(*a*) The examining boards will investigate and report upon the qualifications of all candidates under the following heads:

(1) Physical condition.
(2) Character, habits, especially as to the use of stimulants and narcotics.
(3) Discipline and control of men.
(4) Knowledge of regulations (Army Regulations and other manuals and special regulations).
(5) Care and treatment of sick animals.
(6) Veterinary dispensary work.
(7) Clerical work.
(8) Principals of meat and dairy hygiene and inspection (S. R. No. 70, Circular Letters No. 34 and No. 40, W. D., S. G. O., and specification requirements, O. Q. M. G.).
(9) Mess management.
(10) Minor veterinary surgery and first aid.
(11) Military animal management.
(12) Elementary animal anatomy and physiology.
(13) Elementary veterinary hygiene.
(14) Forage and forage inspection.

(*b*) Practical examination required of all candidates. Actual demonstration of proficiency will be required.

(1). Horsemanship:

(A) Equitation.

(B) Fitting of animal equipment.

(2) Infantry Drill Regulations (orders, commands, and signals, school of the soldier, school of the squad, ceremonies and inspection).

(*c*) Written examination (required of candidates for grades of master hospital sergeant, hospital sergeant, and sergeant first class only).

(1) Military animal management:

(A) Feeds, feeding, and watering.

(B) Care of feet and principles of shoeing.

(C) Stable hygiene (to include grooming, cleanliness, standings, ventilation, construction, etc.).

(D) Restraint and control of animals (use of corrals and chutes, exercises, special controlling devices, etc.).

(E) Transportation of animals.

(F) Points and conformation.

(2) Veterinary hospital management, including care and treatment of sick.

(3) Minor veterinary surgery and first aid, including operating-room technique.

(4) Elementary veterinary hygiene, including quaratine, isolation, and disinfection.

(5) Veterinary materia medica and pharmacy.

(6) Arithmetic.

Ten questions will be asked in each written subject. Proficiency in penmanship and orthography will be estimated from the papers submitted.

(*d*) The board will also require the candidate for the grade of master hospital sergeant, hospital sergeant, sergeant first class, and sergeant to prepare a full set of routine reports and returns pertaining to the Veterinary Corps; also Army paper work, as, for example, morning report and ration return, discharge certificate, and final statement (637, A. G. O.); report of survey (196, A. G. O.); and statement of charges (602, A. G. O.), etc.

(*e*) The examining board will grade the applicant in each subject of the oral and practical examinations only on a scale of zero to 10. The board will not mark written examination papers. Immediately following the close of the examination, the board will prepare a report which shall contain: (*a*) The ratings given; (*b*) the recommendations of the board as to whether the applicant is qualified or disqualified based on these ratings and any additional information which may come to the attention of the board; and (*c*) the certificate of a commissioned officer that the examinations were conducted according to the prescribed regulations, that the candidate did not receive and was not given assistance of any kind in the examination and had no knowledge of the questions to be asked. No applicant shall be recommended who shall not have attained an average of 7.5 in the oral and practical examinations. In the case of applicants for the grades of master hospital sergeant, hospital sergeant, and sergeants first class, the report will be accompanied by (*d*) the written examination, which will be marked in the office of the Surgeon General. Reports of examining boards will be forwarded through the same channels as provided in paragraph 3 for applications for examination.

(7) The examination for the special grades of horseshoers, cooks, mechanics, and saddlers will be oral and practical. They will be held by veterinary officers whenever vacancies occur in their detachments and men fulfilling the qualifications are available for the positions. The result of the examination will be incorporated in a letter of recommendation for the appointment. A certificate of graduation from any authorized Army school of horseshoeing, saddlery, or cooks and bakers should be given due consideration and notation made of this fact in the report, showing date, place of graduation, and proficiency attained. The practical examination will consist in requiring the candidate to demonstrate his proficiency in the work pertaining to the grade as outlined below:

(*a*) Horseshoers—

(1) Practical demonstration of shoeing, to include preparation of feet, preparation and fitting of shoes, and nailing and finishing shoe on foot.

(*b*) Cooks—
  (1) Ability as a cook and knowledge of Army rations must be demonstrated to the satisfaction of the examining officer.

(*c*) Mechanics (temporarily, mechanics may be required to perform the duties of wagoners)—
  (1) Handling of two and four line teams, including care of wagons.
  (2) Harnessing of animals, including fitting and care of harness.
  (3) Knowledge of parts of escort wagon, pages 289–297, inclusive, and of harness, pages 305–307, inclusive, M. Q. M. G., Volume II, 1916.
  (4) Knowledge of stable and animal management as pertaining to animals under his care.

(*d*) Saddlers—
  (1) Practical demonstration in assembling harness and saddles.
  (2) Practical repairing and mending of same.
  (3) Knowledge of leather and working material.

(8) *Privates first class.*—Men will not be recommended for this grade or any of the special grades until they have completed the training of a soldier in the Veterinary Corps, Medical Department. This training will include proficiency in Infantry drill, proficiency in equitation, including the fitting of animal equipment. The men so recommended should be of good character and not under charges nor undergoing punishment.

(*a*) The officer recommending the appointment will certify that the applicant conforms to the foregoing requirements.

(9) Reductions may be made by the officers authorized herein to fill the vacancies thus created and in all other respects as provided in paragraph 1407, A. R. (C. A. R., No. 72).

(*a*) No general reductions and reappointments in the same grades in the Veterinary Corps, Medical Department, are contemplated. The reduction of farriers and wagoners provided for in paragraph 4 of this section is made necessary because of the discontinuance of these two grades.

III. AUTHORIZED STRENGTH OF DETACHMENTS.

1. The allowance for each station is based on the animal strength thereof, with the necessary addition required by increase in the human population. The maximum allowances based on animal strength are shown in the following table:

Line No.	Animal strength.	Station allowance "A."	Hospital allowance "B."	"C."	Line No.	Animal strength.	Station allowance "A."	Hospital allowance "B."	"C."
1	1 to 99	1	0	1	20	3, 600 to 3, 799	16	17	33
2	100 to 199	2	0	2	21	3, 800 to 3, 999	17	17	34
3	200 to 399	4	2	6	22	4, 000 to 4, 199	17	18	35
4	400 to 599	5	3	8	23	4, 200 to 4, 399	18	19	37
5	600 to 799	6	4	10	24	4, 400 to 4, 599	18	20	38
6	800 to 999	7	5	12	25	4, 600 to 4, 799	19	20	39
7	1, 000 to 1, 199	8	6	14	26	4, 800 to 4, 999	19	21	40
8	1, 200 to 1, 399	9	7	16	27	5, 000 to 5, 199	20	22	42
9	1, 400 to 1, 599	10	8	18	28	5, 200 to 5, 399	20	23	43
10	1, 600 to 1, 799	11	9	20	29	5, 400 to 5, 599	21	23	44
11	1, 800 to 1, 999	12	10	22	30	5, 600 to 5, 799	21	24	45
12	2, 000 to 2, 199	12	11	23	31	5, 800 to 5, 999	21	25	46
13	2, 200 to 2, 399	13	11	24	32	6, 000 to 6, 199	22	26	48
14	2, 400 to 2, 599	13	12	25	33	6, 200 to 6, 399	22	27	49
15	2, 600 to 2, 799	14	12	26	34	6, 400 to 6, 599	22	28	50
16	2, 800 to 2, 999	14	13	27	35	6, 600 to 6, 799	23	29	52
17	3, 000 to 3, 199	15	14	29	36	6, 800 to 6, 999	23	30	53
18	3, 200 to 3, 399	15	15	30	37	7, 000 to 7, 199	23	31	54
19	3, 400 to 3, 599	16	16	32					

2. On the receipt of this circular letter each station veterinarian will forward to the Surgeon General through the channels prescribed in Section II, paragraph 3, a statement showing the total strength of the station detachment and the number in each grade estimated in accordance with the instructions herein. These allowances will not be considered official until approved by this office. Senior officers transmitting these should make sure of the accuracy of the figures therein and verify the animal strength and human population on which the allowances are based.

3. By animal strength is meant the reasonably permanent number of animals entitled to veterinary service. Experience has shown that the number of animals at a station, while subject to slight fluctuations, is fairly permanent, based on the strength of organizations present. In estimating allowances, changes of a temporary nature will ordinarily be ignored. A large increase which promises to continue for a prolonged period, although admittedly temporary, may be met by the temporary assignment of additional personnel. Prompt report of all such cases, with estimate of requirements, should be submitted to this office.

4. The authorized allowance is divided into two factors—a "station allowance" (column "A") and a "hospital allowance" (column "B"). Column "C" is the sum of columns "A" and "B."

(*a*) The station allowance is basic and may be regarded as permanent. It is the allowance for service with the animals of the station, assuming that hospital service is provided elsewhere. Each camp, post, remount depot, or other station is authorized this allowance, as shown in column "A."

(*b*) The hospital allowance provides additional personnel for the maintenance of a hospital service. Because of the fact that the total authorized strength of the Veterinary Corps is at present 1,500, a figure much below the minimum considered essential for the requirements of an efficient service, it has been necessary to scale the hospital allowance proportionately. When a larger authorization is secured, this allowance will be increased, but at present it can not be exceeded. Each camp, post, remount depot, or other station maintaining a hospital service is authorized the hospital allowance shown in column "B" in addition to its station allowance. The hospital allowance will be estimated on the animal strength of the entire camp area furnishing patients to the hospital, although the animals may pertain to separate commands.

5. The camp, post, or other station veterinary detachment is the unit of the veterinary organization, and original assignments of personnel will be made to stations rather than to organization, except in the case of mobilized divisions. Consequently the allowance for a station (column "A" or "C," as the case may be) includes the personnel authorized for any mounted commands at the station. It is contemplated that all veterinary personnel, from whatever source, while at a station will form a part of the station veterinary detachment under the immediate command of the station veterinarian, assigned to appropriate duties by him and carried on his current returns. Personnel from this detachment should be assigned to combatant organizations which are authorized an allowance by Tables of Organization, and the usage as regards other Medical Department personnel under similar conditions laid down in paragraphs 1433, A. R. (C. A. R, No. 74) and 1435½ (C. A. R. No. 8), should be followed.

(*a*) Every effort will be made by the station veterinarian to select suitable men for duty with combatant units and to see that they are properly trained and equipped for field duty at all times. Under existing regulations, the only grades authorized for such units are stable sergeants (farriers), privates first class, and privates, and there is no authority for the assignment of noncommissioned officers and enlisted specialists, other than the foregoing, to such organizations.

(*b*) The allowances for stations will ordinarily be found adequate to provide authorized personnel for combatant units at such stations and leave a noncommissioned officer and a small nucleus to maintain a hospital service in case the unit moves out; that is to say, the total number of enlisted men will be adequate, but in some cases there may exist a shortage of stable sergeants because of the relatively large number (four) now allowed to a regiment of Cavalry, for example. This situation is due to the absolute shortage in the entire Veterinary Corps and can not be remedied until the corps is increased. In all such cases at least one stable sergeant should be carried as assigned to the regimental veterinary detachment, and as many more up to the authorized allowance of four as may be available from the entire allowance for the station or stations to which the regiment is assigned. When the number of stable sergeants falls short under these circumstances, specially selected privates first class will be trained and assigned for the necessary duties.

(*c*) At stations containing mobilized divisions, it is contemplated to assign and maintain a permanent camp veterinary detachment, based on the animal strength, exclusive of the division, available for the camp service and not to be disturbed in case the division moves. The divisional personnel, therefore, constitutes a separate administrative unit. In view of the limited total strength of the Veterinary Corps now authorized, it will be impossible at present to provide the entire personnel of 51 men, authorized by Tables of Organization No. 43, for a division. The divisional service, including the mobile section, should be organized to conform to Tables of Organization No. 43, but until additional men are made available, will comprise a total of 27 only, in the following grades:

Sergeant first class	1
Sergeant	1
Corporal	1
Stable sergeants	10
Horseshoers	1
Privates first class or privates	13

(Farriers have been replaced by stable sergeants and the grade of wagoner is not authorized.)

6. The following examples show the method of estimating authorized enlisted strength from the table:

(*a*) A camp has 350 animals and sends its hospital cases to a veterinary hospital at the remount depot.

Authorized strength of camp detachment: 4 (line 3, column "A").

(*b*) The same camp maintains a hospital.

Authorized strength of camp detachment: 6 (line 3, column "C").

(*c*) A camp has 350 animals and is the station of a regiment of cavalry with 1,400 more, and hospital cases are treated as in subparagraph (*a*) above.

Authorized strength of camp detachment: 11 (line 10, column "A").

If the regiment moves it is accompanied by its authorized detachment of 6.

(*d*) The same camp maintains a hospital.

Authorized strength of camp detachment: 20 (line 10, column "C").

(*e*) At a camp with 350 animals is a division with 3,000 animals, and hospital cases are disposed of as in subparagraph (*a*).

Authorized strength camp: 4 (see subpar. (*a*) above).

Authorized strength division: 27 (see par. 5*c* above).

If the division moves, it is accompanied by its authorized detachment.

(*f*) The same camp maintains a hospital.

Authorized strength division: 27.

Authorized strength camp: 19 (based on station allowance of 4 for 350 animals, plus hospital allowance of 15 for 3,350 animals).

(*g*) In the same way the remount depot of 1,200 animals at the camp having 3,350 in addition is authorized a station allowance of 9, based on 1,200 animals (line 8, column "A"), and a hospital allowance of 20, based on a total animal strength of 4,550 (line 24, column "B"), or a total of 29 enlisted men. If the hospital is maintained in the camp outside the depot, the hospital allowance should be added to the camp allowance, leaving the remount depot its authorized station allowance of 9.

7. The foregoing allowances, based on animal strength, do not take into consideration the additional personnel required for meat and dairy inspection duty. Beginning with stations having an animal strength of 200 or more, those having from 1,000 to 7,500 human population are authorized one additional enlisted man for meat and dairy inspection, and those above 7,500 human population are authorized two additional enlisted men for such duties.

8. *Returns.*—The last three sentences of paragraph 6, Section III, Circular Letter No. 31, are amended to read as follows:

Separate returns on Forms 111 and 47, M. D. (47a in the field), will be made for the veterinary detachment of each camp, post, remount depot, and other station. The veterinarian of a mobilized division will render separate returns for all veterinary personnel assigned to the division. Personnel belonging to the station detachment assigned to combatant units (except mobilized divisions) will be so designated on the station returns, and unless given other status will be carried on detached service when the unit moves out. Separate returns from such units will be rendered only when they constitute detached commands in the field, but in camps and garrison their rendition will cease, all data being included in the return for the station.

IV. ALLOWANCES IN NONCOMMISSIONED AND SPECIAL GRADES.

1. The allowances for divisions and other organizations are set forth in the proper Tables of Organization. (See also Sec. III, par. 5*c*, above.)

(*a*) Master hospital sergeants and hospital sergeants will be made the subject of special allotment later.

(*b*) *Sergeants first class.*—One sergeant first class is authorized at each remount depot at which a veterinary hospital is maintained and in each other camp or station detachment with a total enlisted strength of 15 or more.

(*c*) *Sergeants.*—Sergeants are authorized in the following proportions:

In a detachment of 5 to 18, inclusive, 1 sergeant.
In a detachment of 19 to 29, inclusive, 2 sergeants.
In a detachment of 30 to 44, inclusive, 3 sergeants.
In a detachment of 45 to 59, inclusive, 4 sergeants.
In a detachment of 60 to 74, inclusive, 5 sergeants.

(*d*) *Corporals.*—At each station of 1,000 human population or more, with animal strength of 200 or more, the enlisted man authorized for meat and dairy inspection duties (see Sec. III, par. 7) may be a corporal.

(*e*) *Cooks.*—One cook is authorized in each detachment of 15 or more.

(*f*) *Stable sergeants.*—Stable sergeants are authorized in the following proportions:

In a detachment of 5 to 8, inclusive, 1 stable sergeant.
In a detachment of 9 to 14, inclusive, 2 stable sergeants.
In a detachment of 15 to 29, inclusive, 3 stable sergeants.
In a detachment of 30 to 44, inclusive, 4 stable sergeants.
In a detachment of 45 to 59, inclusive, 5 stable sergeants.
In a detachment of 60 to 74, inclusive, 6 stable sergeants.

(*g*) *Horseshoers.*—One horseshoer is authorized at each remount depot and in each detachment of 16 or more total strength maintaining a hospital service.

(*h*) *Mechanics.*—Same as horseshoers.

(*i*) *Saddlers.*—One saddler may be authorized at remount depots maintaining a hospital service upon approved request.

(*j*) *Privates first class.*—The proportion of privates first class to privates in any detachment will not exceed 4 to 1.

2. Detachments of one, two, three, and four men, because of their small size and limited function in many cases, will be made the subject of special allowance in grades, based on the peculiar needs of the service at each station.

(*Cir. Letter No. 44, Veterinary Division, Surgeon General's Office, December 20, 1919.*)

PHYSICAL RECONSTRUCTION.

Training Departments in Hospitals.

1. It has been noted that patients who have been confined to hospitals for more than two weeks have been rendered unfit for the immediate resumption of their full military duties as the result of such confinement and because of the medical or surgical conditions for which they were treated. Following return to duty, these soldiers frequently break down and are compelled to return to the hospital for further treatment. In many instances individuals have been returned to the hospital several times for this reason. Repeated admission to hospital or prolonged stay in hospital tends to result in hospitalization which more or less permanently unfits the soldiers for military duty.

2. There is a time when most hospital convalescents, although not ready for discharge, are able to begin physical and limited military training. It is, therefore, directed that a training department be established in connection with each hospital in the convalescent division to which convalescents may be transferred by the chiefs of the medical and surgical services of the hospital.

3. This training department is intended to be auxiliary to the developmental battalions. The men with whom it will deal are those who for various reasons must be kept in the hospital and whose discharge to the development battalions or to duty will be hastened rather than postponed by the training and whose time without such training would be largely misspent.

4. While undergoing training these patients for all purposes of medical or surgical supervision and treatment shall be referred to the surgeons by whom they were transferred.

5. A medical officer will be designated by the commanding officer of the hospital, who shall have charge of the training department. The duties of this officer will be:

First. To admit and classify the men transferred to his department according to the strength and condition of each.

Second. To supervise their instruction in work, exercise, and drill.

Third. To maintain through his subordinates strict military discipline.

Fourth. To see that suitable records are kept.

Fifth. To recommend at the proper time those patients for discharge either to the developmental battalions or to their former commands, as the condition of the patients may warrant.

6. Under the officer in charge of the training department there should be subordinate medical officers in sufficient number to supervise the convalescent wards and the patients therein. The duties of these officers shall be:

First. To have immediate supervision and control of the patients in their charge.

Second. To treat all minor ailments and to refer to the proper hospital surgeon any major illnesses that may arise.

Third. To assist the officer in charge of the training department in determining how much each individual is capable of; when to advance or retard him, according to his physical condition; and when to discharge him from the department.

7. Connected with the department there should be assigned commissioned or noncommissioned officers competent to conduct the military training.

8. In general, the activities should be divided into three major groups, namely, work, drill, and exercise. Exercise should consist of calisthenics and games. The last is considered by no means the least important. It has been found in some of the hospitals that representatives of the Y. M. C. A. have been eager to cooperate in the matter of calisthenics and games.

9. It would be advisable to provide a suitable room or building for use as a gymnasium in bad weather.

10. The organization, to be effective, must conform to military regulations. Strict discipline should be maintained and military formalities and ceremonies should be observed.

(*Letter to commanding officers of all base hospitals at National Army and National Guard encampments, Surgeon General's Office, July 10, 1918.*)

Reconstruction.

1. Inasmuch as sick and wounded overseas cases are to be sent to a large number of general and base hospitals, it is advisable that limited reconstruction work be undertaken in these institutions.

2. An educational officer and physiotherapeutist with aides will be assigned to each hospital to carry on the work in physical reconstruction.

3. It is desired that you provide adequate space for this purpose and cooperate just as fully as possible with the physical reconstruction officers, in order that this work may be executed in the most efficient manner.

(*Cir. Letter, Surgeon General's Office, December 11, 1918.*)

Status of the Physiotherapeutic Department.

1. The director of physiotherapy is assigned to and works under the direction of the commanding officer of the base or general hospital.

2. The department of physiotherapy is for the use of all departments of the hospital and is not attached to, nor is it under the direction of, any one department.

3. The men composing the enlisted personnel for the physiotherapeutic service are specialists covered in General Orders, No. 52, May 15, 1918. In accordance with paragraph 2 of said orders, they can not be compelled to serve in other capacities than for the particular purpose for which inducted. It is expected, however, that they will be given military drill and instruction, but will not participate in military guard, police, or routine duty, unless it is absolutely necessary.

4. All matters relating to the transfer and promotion of the physiotherapeutic staff should, as as far as possible, be referred to the director of physiotherapy for recommendation.

5. Approximately one-half of the enlisted personnel in physiotherapeutic work at this time may be made noncommissioned officers. Recommendations for promotions should be sent to the Division of Physical Reconstruction of this office.

6. Reconstruction aides in physiotherapy are assigned to the commanding officer, and where there is a director of physiotherapy, work under his direction.

7. Where there is no director of physiotherapy, reconstruction aides in physiotherapy will be directly responsible to the chief of the clinical service to whom they have been assigned by the commanding officer.

(*Cir. Letter, Surgeon General's Office, December 27, 1918.*

Unit Courses of Study.

1. The need for organized courses of instruction fitted to the conditions in reconstruction hospitals has become more evident as the work proceeds. The Office of the Surgeon General has cooperated with the Federal Board for Vocational Education and the Bureau of War Risk Insurance in preparing these courses. A joint committee representing these agencies was created and the committee empowered to engage collaborators, experts in their several lines of instruction, to prepare manuals. These manuals consist of suggestions and instructions for teachers and lesson

sheets for students. The courses are all planned on the short unit basis and with the needs of the reconstruction program clearly in view.

2. It is intended that in all these courses as used in our hospitals the curative value of the work as outlined should receive primary consideration. The therapeutic effect of any activity depends almost entirely upon its appeal to the man, upon the degree to which it enlists the man's interest and effort, to the extent that it engrosses his attention, occupies him completely, and calls forth his best cooperation. It will bring forgetfulness of disabilities, give hope instead of despair, and improve the chances for full functional restoration. For most men the activity which appears to them likely to be of most direct use to them will make the greatest appeal, and hence exert the best curative effect.

3. It is the aim of these courses to so organize a man's workshop activity as to give him in the shortest time possible some very direct, and certainly useful, skill or information. It is believed that if the men are assured that they are making real progress in some line in which they are truly interested, it will increase their cooperation and consequently curative effect. The curative workshops, fields, and classrooms will exert therapeutic value because they give useful knowledge and skill which appeal to the men as being well worth while.

4. These courses as prepared will not be prescribed but will be offered for the assistance of instructors. As will be noted from the list, courses are varied to suit different types of patients. By judicious selection, instructors should be able to plan work to fit individual needs, abilities, and interests.

5. These courses are being printed by the Federal Board for Vocational Education. It is hoped that they will be completed and ready for distribution soon. The exact date for their completion, however, can not be set.

6. In order to save time when the courses are ready for distribution and get them out where needed in the shortest possible time, it is suggested that educational officers scrutinize the attached list and make out requisition for such courses as they are likely to need. If some are very urgently needed, make special mention of them. The mailing list will be compiled from the requisitions received in response to this inquiry and each course, as soon as printed, will be forwarded. A sample course of each as printed will be sent to all hospitals, whether it has been requisitioned or not. Courses in quantities, however, will be sent out only when requested. Please use both joint series number and title in requisitioning. For your convenience, you can indicate your needs on the extra copy of the list which is inclosed. Be sure that this list is plainly marked, indicating the hospitals from which it is sent.

(*Cir. Letter No. 25, Surgeon General's Office, January 10, 1919.*)

Physical Reconstruction of Sick and Wounded Disabled Soldiers in Base Hospitals.

1. The War Department has approved the revised plans of this office made necessary by the signing of the armistice for the use of curative work as part of the treatment of disabled soldiers in designated general and base hospitals.

2. It was recognized that the problem involved in the treatment of disabled soldiers must be met at once, inasmuch as the wounded and sick from overseas should be returned home at the earliest possible moment and that this would be accomplished within the next two or three months.

3. There would be no time for the construction of additional buildings or the completion of structural projects but slightly advanced, such as had been planned, to afford facilities for ideal physical reconstruction.

4. The revised plans as approved involve the utilization of existing hospital buildings, wards, barracks, and shops for the housing of curative workshop equipment and the apparatus for physiotherapy.

5. Each designated base hospital was notified that a simple workshop equipment had been ordered for it and that additional apparatus for shops would be secured as rapidly as possible from other War Department organizations. Like provision has been made for the physiotherapy equipment in each hospital.

6. An efficient personnel of commissioned and noncommissioned officers to administer the work, enlisted men, and also an adequate number of reconstruction aides to carry on the curative workshop schedule and physiotherapy in each hospital will be furnished on request by this office.

7. Attention is emphatically directed to the adopted policy of this office, that utilization of the curative workshop schedule in wards, shops, and in outdoor pursuits, in military hospitals, finds its

justification in the fact that these measures promote more certain and rapid recovery, both physical and functional. It is also recognized by those who have had experience in the utilization of curative work in the treatment of the sick and injured soldier, that it stiffens the morale and improves discipline, because it diverts the mind of the disabled soldier from a contemplation of his handicap and arouses some interest in his future. In this connection arrangements have been made by the American Red Cross for a proper blending of recreational activities in each base hospital.

8. The curative workshop schedule adopted by this office embraces training which is essentially prevocational and even vocational in character. A workable and practical cooperative plan has been made with the Federal Board for Vocational Education by means of which the disabled soldier whose vocational training may be begun as a curative measure in the hospital will be continued after his discharge from the Army by the Federal board. The Federal Board for Vocational Education will have a representative in each hospital whose function it will be to interview compensable disabled soldiers and to give them vocational guidance and instruction as to training and reeducation after their discharge from the Army. At those hospitals where there is no Federal board representative, at the request of the Federal board, this office has consented that the representatives of the educational service shall act as representatives of the Federal board, as fully as their proper duty permits, to instruct the disabled soldier, who is compensable and who desires training after his discharge, of the opportunities offered by the Federal board. Some literature has already been prepared and other circulars of information are in course of preparation, compiled by a committee composed of representatives of this office, of the Federal board, and of the Bureau of War Risk Insurance, which will be furnished in the necessary quantities for distribution to the soldiers in each hospital. These circulars give complete information to the soldier of the privileges which the Government has provided for him during his service as a soldier and after his discharge from the Army.

9. The policy approved by the War Department, which embraces the application of curative work and efficient physiotherapy in the treatment of sick and wounded soldiers, implies that this is to be carried on in the hospitals, to hasten the restoration of disabled officers and soldiers to health and function, as fully as possible, considering the nature of their disabilities, the limitations of their military service, and the other provisions which the Government has made for the care of the permanently disabled.

10. When the disabled soldier shall have received the treatment embraced in paragraph 9, he, by virtue of paragraph 4, Circular 188, W. D., should be discharged from the hospital and sent to the convalescent center. The soldier sent to the convalescent center is on a duty status and is, therefore, not a patient. He should therefore be in such condition when he is sent to the convalescent center as will justify his discharge within a few days, or in a short period of time, for the purpose of receiving exercise, drill, and appropriate play, which will harden him and overcome, as far as possible, defects which are amenable to the measures which may be utilized in the convalescent center. Circular 188, W. D., indicates the location of convalescent centers in camps and general statements concerning their administration from a medical point of view.

11. In the administration of the curative workshop schedule and the utilization of physiotherapy in the base hospitals, it is suggested that the camp surgeon may utilize both curative work and physiotherapy for the convalescent soldiers on duty in convalescent centers by sending them to the workshops and physiotherapy rooms for such treatment as the medical personnel of the convalescent center may desire to be applied.

12. This office requests that it be informed, by the commanding officers of the hospitals where physical reconstruction is carried on, of their present and future needs with respect to personnel and equipment for the curative workshop schedule and for physiotherapy. In this connection commanding officers are informed that they may be able to secure qualified instructors for the workshop schedule and for physiotherapy from the disabled soldiers, who have reached the stage of convalescence and who are willing to remain in the service, or from the enlisted personnel of the camp by transfer through the usual military channels.

13. It is requested by this office that the commanding officers of the base hospitals take an individual interest in the program of physical reconstruction. As stated above, physical reconstruction of disabled men is a policy approved by the War Department and its successful application demands the whole-hearted and sympathetic cooperation of the commanding officer, the medical staff, and of others who come in contact with the sick and wounded disabled men.

(*Cir. Letter No. 29, Surgeon General's Office, January 14, 1919.*)

The Physical Reconstruction of Patients in Base Hospitals and Soldiers in Convalescent Centers.

1. The War Department has authorized the application of curative work in wards, shops, and out-of-door employment in the treatment of sick and wounded disabled soldiers.

2. Circular Letter No. 29, S. G. O. 356 (general), contains definite details concerning the approved methods of the application of curative work in military hospitals.

3. The policy of this office includes the recognition of the desirability of centralizing the educational activities (curative work) of the problems involving medical care of disabled men. The program of the application of the curative workshop schedule approved by the War Department provides facilities in the form of an educational personnel, curative workshop and equipment, department of physiotherapy and equipment, in each hospital. The educational activities of the base hospital should provide opportunity for the application of curative work, when that is necessary, to the soldiers assigned to duty in the convalescent center for the final training and hardening process before they are recommended for discharge. While these men are not on sick call the curative work prescribed for them could be applied in the sense of out-patients.

4. In this connection it is requested that if it is possible and feasible that all of the shop and other trade activities of the camp, with equipment for shops and outside occupations, which may be spared, may be utilized in the curative workshop schedule and placed at the disposal of the chief of the educational department and his personnel of the base hospital.

5. That the administration of the curative workshop schedule may be as efficient as possible for all disabled men who may be benefited thereby, it is suggested that the convalescent center be located as near as possible to the base hospital.

6. While it is appreciated that the actual medical and surgical treatment of the men in the convalescent center will have been practically completed in the hospitals before they are assigned to duty in the convalescent centers, many of these men will need rehabilitation and a hardening process to improve their general morale and physical condition before they are recommended for discharge. This hardening process may be best obtained by supervised graduated physical exercises, drills, games, and, when necessary, by the utilization of the curative workshops in the educational center. Soldiers who may benefit by academic studies should be given this opportunity under the supervision of the chief educational officer and in this way may continue this study which was begun when the soldier was in a base or general hospital. The War Department Commission on Training Camp Activities has agreed to furnish the necessary physical directors and equipment in the recreational activities of the convalescent center. The American Red Cross, cooperating with the Y. M. C. A., the K. of C., the Salvation Army, and the Jewish Welfare Board, will furnish recreational activities in the base hospital and agencies which will stiffen the morale of the men by home service activities through local Red Cross chapters and other facilities which they command.

7. Since the signing of the armistice there has been added difficulty in securing the needed personnel of educational officers and technical instructors to carry on the curative workshop schedule. It is requested that an investigation be made of the enlisted personnel of the camp and that qualified men found be transferred to the educational department of the base hospital.

(*Cir. Letter No. 33, Surgeon General's Office, January 18, 1919.*)

Library for the Educational Service.

1. The library war service of the American Library Association has sent to each base hospital, for use of the educational service, approximately 200 books on various subjects which will probably be of direct use to soldiers enrolled in various phases of the educational activities. Included are several copies of elementary readers, shorthand textbooks, and other books needed in quantities. These books, whenever possible, should be placed in the building used by the educational service.

2. A large number of other books on miscellaneous subjects are available for use of the educational service and may be obtained from the hospital librarian now stationed at your hospital by the library war service.

3. The hospital librarians have been instructed to cooperate with the educational officers in every way possible. If special books needed are not now available in the camp, they can probably be obtained through the hospital librarian.

(*Cir. Letter No. 35, Surgeon General's Office, January 18, 1919.*)

Physical Reconstruction Registers, Form 58.

1. Attached hereto is a brief summary of certain data from the physical reconstruction registers Form 58, received at this office.

2. Attention is called to the importance of transmitting the physical reconstruction registers, Form 58, to the Surgeon General's Office as promptly as possible after the discharge of a man from the hospital.

3. This register constitutes the most important record of the work of physical reconstruction. It is important that your hospital should be credited at once with all the educational work which has actually been done there.

SUMMARY OF ALL EDUCATIONAL WORK FROM SEPTEMBER, 1918, TO JANUARY, 1919, AS SHOWN BY PHYSICAL RECONSTRUCTION REGISTERS (FORM 58) FROM SIX HOSPITALS FUNCTIONING IN PHYSICAL RECONSTRUCTION.

The figures in the heading at the top represent the number of days enrolled in educational work. For convenience the number of days has been combined into units of 1 to 10.

The figures opposite the hospitals, designated by letters, represent the number of enrollments in the three divisions of educational courses according to the handbook: I. General courses (including academic and professional subjects); II. Technical courses (including (*a*) shop and trades, (*b*) commercial, (*c*) agriculture); III. Recreational courses (including calisthenics, drills, hospital service, etc.).

Hospitals	1 to 10.	11 to 20.	21 to 30.	31 to 40.	41 to 50.	51 to 60.	61 to 70.	71 to 80.	81 to 90.	91 to 100.	101 to 110.	111 to 120.	121 to 130.	131 to 140.	141 to 150.	151 to 160.	161 to 170.	171 to 180.	181 to 190.	Total.
A	383	284	167	125	65	36	31	26	11	12	6	4	2	2	3	1	1	.....	.....	1,159
B	213	148	150	103	65	49	32	34	27	22	9	16	13	3	5	2	1	1	6	899
C	108	66	56	53	41	19	5	4	0	2	0	1	.....	.....	.....	.....	.....	.....	.....	355
D	49	84	84	31	27	6	14	6	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	305
E	60	80	48	38	22	11	10	7	3	0	1	2	0	2	1	1	.....	.....	.....	286
F	17	61	36	51	46	13	11	22	5	0	0	3	.....	.....	.....	.....	.....	.....	.....	265
Total.	830	723	541	401	266	134	103	99	50	36	16	26	15	7	9	4	2	1	6	3,269

JANUARY 13, 1919.

(*Cir. Letter No. 39, Surgeon General's Office, January 21, 1919.*)

Physical Reconstruction Record.

1. It is requested that the following record from your hospital be submitted to the Surgeon General's Office as promptly as possible.

2. This information is valuable and each blank should be filled in as completely and accurately as your records permit.

	1918.												
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Educational Department:													
Began operating (indicate)													
Individuals enrolled during													
Individuals dropped during													
Physiotherapy Department:													
Began operating (indicate)													
Number of patients treated during													
Number of patients dropped during													

(*Cir. Letter No. 48, Surgeon General's Office, January 22, 1919.*)

Products of Occupational Therapy.

1. The purchase of raw materials for use in occupational therapy is governed by the instructions issued from this office October 16 last (S. G. O. 353, Occupational therapy), and no other method of purchase is authorized.

2. Neither patients nor attendants are expected, nor may they be required, to purchase the raw materials out of their own funds; and the acceptance of donations of raw materials by individual patients to be fabricated for sale is not permissible. This is not to be construed as prohibiting donations to common stock nor to forbid donations to individuals to be fabricated for gifts or for personal keepsake.

3. Sales of products of occupational therapy are to be made only as indicated in Section C, letter October 16, 1918, and Circular Letter No. 22, this office, January 10, 1919. Patients are not to be permitted individually to sell their work to visitors. The proceeds of all sales must be taken up as accruing to the hospital fund and not otherwise, subject to subsequent distribution as gratuities under the conditions specified in Section C, letter October 16, 1918.

(*Cir. Letter No. 63, Surgeon General's Office, February 1, 1919.*)

Report on Personnel on Educational Staff.

1. You are directed to mail to this office, attention Division of Physical Reconstruction, a complete list of all persons on duty on the educational staff, including commissioned officers, non-commissioned officers, enlisted men, civilians, and whether engaged as reconstruction aides or otherwise.

2. You are directed to indicate in the list the rank and assignment of each person and the special work in which engaged. In the case of persons in military service, it should indicate whether the men were obtained through induction or transferred, or are patients assigned to such work.

3. You are directed to indicate the names of persons on the educational staff whose services are no longer needed.

(*Cir. Letter No. 65, Surgeon General's Office, February 1, 1919.*)

Education Service Reports.

1. Attached hereto are certain data from the educational service reports for December. Your attention is called to the following instructions in making out this report:

2. Section B, item 5, page 2: This includes men sent to convalescent camps. Item 8: Figures should balance those in the preceding items. Physical reconstruction registers (Form 58) should not be transmitted to the convalescent camps but to the Surgeon General's Office. Transfer Form 58 only when a patient is transferred to another hospital functioning in reconstruction work. The number of registers as given on your report should equal the number sent to the Surgeon General's Office during the month.

3. Page 3, column 4: Number of enrollments at the end of the month should equal those on the first, plus the new admissions, minus those dropped, e. g., 37 enrolled on the first, plus 20 new admissions, minus 10 dropped, gives a total of 47 at the end of the month. It is essential that each statement be accurate in order that the educational department receive credit for its work.

4. Items 1, 2, 3, 4, and 5, page 8: These should equal the number on the first of the month, plus the new enrollments during the month, e. g., the total for general courses should equal the number on the first of the month, plus the new admissions as given in the itemized statements on page 5. This gives credit for all enrollments throughout the month.

5. Page 7: Under recreational courses it is unnecessary to include voluntary recreational activities. Include therein only courses prescribed by the ward surgeons, e. g., curative walks, calisthenics, etc.

6. Item 6, page 8: It is important that the correct number of individuals enrolled be given, as these figures raise or lower the percentage. Report all the individuals who have been enrolled at any time during the month in any form of educational work—ward as well as shop and school; reporting only those enrolled at the end of the month is incorrect.

7. Section D, page 9: Record the types of cases enrolled in the educational department only, not those in the entire hospital.

8. If you have information not called for in the report, do not change the typed form of the report, but attach it on a separate sheet. These reports contain information for circulation. It is important that they reach the Surgeon General's Office not later than the 10th of the month.

(*Cir. Letter No. 73, Surgeon General's Office, February 4, 1919.*)

Red Cross Emergency Fund for Educational Service in General and Base Hospitals Doing Reconstruction Work.

1. The Red Cross has placed at the disposal of the Department of Education, Division of Physical Reconstruction, a noncumlative emergency fund of $200 per month for each base and general hospital functioning in reconstruction work.

2. This fund is to be expended under the direction and upon the order of the chief educational officer in the hospital. The Red Cross will authorize its local representative to honor orders against this fund when signed by the chief educational officer. Each order shall show the data required in the monthly reports described in paragraph 3 of this letter, and shall be receipted by the payee. These canceled orders will be accepted by the Red Cross for its vouchers from its representatives. Blank order books will be furnished by the Red Cross.

3. The chief educational officer will report at the close of each month to the Surgeon General, Division of Physical Reconstruction, giving a detailed statement in duplicate of all expenditures from this fund. Such report shall state dates, items, amounts, and purposes for which items are used, including a statement of the emergency which made immediate expenditure necessary. Receipts shall be taken for all expenditures of $1 and over and shall accompany this report. Failure to make this report promptly and satisfactorily will be considered grounds for withholding next month's fund.

4. Only items of supplies, equipment, and service which are needed immediately and are not readily procurable from Army supplies or funds may be bought with this fund. Items which can be regularly secured in a longer time from Army sources, but whose usefulness would be seriously impaired by the time necessary to secure them from Government sources, can be procured with this fund. It is the purpose of this donation from the Red Cross to expedite the educational service by supplying missing items of material or service, which will make available for immediate use the larger equipment furnished regularly from Army sources. It is for these reasons that expenditure has been allowed upon the order of chief educational officer without first procurement of specific authorization upon requisition. Educational officers will note carefully the intent and purposes of this fund and see that it is used properly and effectively. The continuance of the fund is dependent upon its sane and proper use.

5. Large expenditures for either expendable or nonexpendable materials should not be made from this fund but may be procured from Army sources or accepted from Red Cross in accordance with Circular Letter No. 51.

(*Cir. Letter No. 80, Surgeon General's Office, February 10, 1919.*)

Report of Chief Educational Officer.

1. It is desired that the chief educational officer of your hospital submit through you every month a report covering all educational work. This report must be received at the Surgeon General's Office by the 10th of the following month.

2. The inclosed form should be used for this report. The instructions contained in the circular letter should be observed and retained for future reference.

3. It is desired that the report be made as complete as possible and that further data be submitted where considered of value.

4. Blank forms will be forwarded from the Surgeon General's Office. Additional copies will be mailed upon request.

(*Cir. Letter No. 84, Surgeon General's Office, February 10, 1919.*)

Hospital Gardens.

1. The attention of all concerned is invited to the following copy of correspondence relating to the maintenance of hospital gardens:

From: Commanding officer, U. S. Army General Hospital No. 9, Lakewood, N. J.
To: The Surgeon General of the Army, Washington.
Subject: Hospital farm and garden.

1. Last season the educational division of this hospital prepared and cultivated a small farm and garden both for educational purposes and to provide fresh vegetables for the hospital. The plan was entirely successful.

2. Special Regulations No. 77, section 12, entitled, "Regulations for the cultivation of land and the selling of farm, garden, mineral, and forestry products at Army camps, cantonments, and posts," has just been received. This regulation apparently places the control of farms and gardens under the Quartermaster's Department.

3. Information is requested as to whether Special Regulations No. 77 will interfere with our plans for cultivating a farm and garden under the educational division as was done last year.

CHARLES F. MASON,
Colonel, Medical Corps, U. S. Army.

CFM/MS.

CLB/MC.

[1st ind.]

S. G. 356 (G. H. No. 9) K.
War Department, S. G. O., February 4, 1919.
To the director of Purchase, Storage and Traffic Division, Farms Branch, Washington, D. C.

1. It is desired that, if practicable, the garden at General Hospital No. 9, Lakewood, N. J., be considered a hospital garden and exempt from the operations of Special Regulations No. 77.

2. In this connection attention is invited to action taken by your division on a similar request from the General Hospital No. 34, your file number "331.6 S–F (General Hospital No. 34)."

[2d ind.]

331.6 S–F (General Hospital No. 9).
Salvage Division, O. D. P. S., Farms Branch, Munitions Building, Washington, D. C., February 26, 1919.
To Office of the Surgeon General of the Army, Hospital Division, Building F, Seventh and B Streets, Washington.

1. With reference to the first indorsement, attention is invited to the copy inclosed herewith of memorandum to the director of Purchase, Storage and Traffic relating to the operation of hospital gardens, which answers the question raised in the foregoing letter, paragraph 3 thereof.

[Inclosure.]

FEBRUARY 20, 1919.

331.6 S (General Hospital No. 34).
Memorandum for the director of Purchase, Storage and Traffic.
Subject: Operation of hospital gardens.

1. It is recommended that the attached papers, pertaining to the operations of a farm at the United States Army General Hospital No. 34, East Norfolk, Mass., be returned by indorsement to the Surgeon General of the Army, worded substantially as follows:

"Special Regulations No. 77, W. D., October 11, 1918, charges the Salvage Division, among other things, with 'The salvage and development of agricultural, mineral, and forest land owned, purchased, or leased for the Army without interfering with authorized gardening and farming thereon.'" (Par. 2, subpar. *d.*)

The above-quoted paragraph from the regulations referred to clearly indicates that gardens and farms already being or which may hereafter be operated in connection with hospital and other institutions under the Surgeon General of the Army are not to be included among salvage activities and, hence, this office interposes no objection to the operation of the hospital garden at East Norfolk, Mass., under such instructions as may be issued by the Surgeon General of the Army in pursuance of existing provisions of Army Regulations pertaining to post gardens.

2. It is believed that the foregoing is a correct interpretation of Special Regulations No. 77, W. D., October 11, 1918, and that it was not contemplated in vesting jurisdiction over farming activities in the Salvage Division to include therein the establishment and operation of post gardens, provided for in Army Regulations 342–4.

(*Cir. Letter No. 113, Surgeon General's Office, March 4, 1919.*)

Radio Equipment for Reconstruction Work.

1. The director of military aeronautics requests that he be immediately notified of the arrival of radio equipment for reconstruction work at your hospital.

2. This information is necessary in order that any shipment that might have gone astray can be traced.

(*Cir. Letter No. 150, Surgeon General's Office, March 24, 1919.*)

Letters to Patients to Promote Hospital Service.

1. At U. S. Army General Hospital No. 2, Fort McHenry, Md., a plan has been in operation which has had splendid results in securing the attention and interest of new patients in the hospital. Inclosed are copies of letters used at Fort McHenry.

2. The general plan is as follows: The names of new patients are secured from the hospital authorities as soon as the men are received or their coming is known. The names of the men are typed into the letter form with a ribbon which matches the print. The letters are in typewriter type, printed through a ribbon, and bear a facsimile signature of the commanding officer. The letter is addressed and mailed in the hospital postoffice.

3. The receipt of this letter conveys a welcome to the men. They feel that some one in the hospital is interested in them because they had their names, and a message to them personally.

That the commanding officer of the hospital should take such an interest in the patients immediately creates a favorable impression, and puts the patients in a frame of mind to respond favorably to the hospital service. Even if to the discerning the letter appears as a circular letter, yet the interest and welcome of the commanding officer remains the same and the effect upon the men is good.

4. The attention of commanding officers and educational directors is called to this device and it is recommended to them as a plan which has proved successful. Similar plans have been used in other hospitals, but in this case details seem to have more completely worked out and a personal touch conveyed.

(*Cir. Letter No. 161, Surgeon General's Office, March 27, 1919.*)

Historical Sketch of Reconstruction Work.

1. Physical reconstruction service is a new thing in Army practice. It is highly desirable that the experiences and history of this service in our hospitals be made a matter of permanent record. The knowledge gained and the methods established will be of use not only in military hospitals but in civil institutions as well.

2. It is desired that in each hospital functioning in physical reconstruction the chief educational officer prepare a brief historical sketch of the reconstruction service in that hospital. This sketch should treat the subject from a historical viewpoint; should be accurate as to details, dates, and figures; it should include all branches of physical reconstruction service which come under the direction of the chief educational officer. Detailed statistical treatment of figures already furnished to this office in regular reports need not be included, though short summary of such figures which show the extent of the work should be included.

3. This need is of great importance, and educational officers should be notified to collect the necessary data. Where the chief educational officer leaves the service in any particular hospital he should file with the Surgeon General a sketch covering the period of his administration.

(*Cir. Letter No. 163, Surgeon General's Office, April 1, 1919.*)

Americanization Courses in Reconstruction Hospitals.

1. One of the most valuable and most popular lines of instruction offered in the educational service in hospitals have been the so-called Americanization courses. These, of course, include some elementary instruction for illiterates, but also courses in American history and Government.

2. Unit courses No. 33, printed and distributed by this office, a supply of which has been furnished you, outlines a course in practical civics. This is intended primarily as an Americanization course. The inclosed report from General Hospital No. 15, New Haven, Conn., shows the use that is being made of this at that hospital.

3. This report is submitted as suggesting a profitable line of instruction and a practical method of procedure.

(*Cir. Letter No. 170, Surgeon General's Office, April 9, 1919.*)

Education Service Reports.

1. Attached hereto are certain data from the education service reports for February.

2. Your attention is called to note on page 5 of the summary:

> In calculating the percentage of patients enrolled in educational work effort has been made to keep to a uniform basis. A certain per cent of the hospital population is made up of short-time patients (one week or less), patients confined to wards on account of contagion, psychopathic patients, etc. On account of administrative difficulties and various opinions regarding the eligibility of such patients for educational work, no uniform rules or regulations for excluding these patients can be made. Therefore the percentage is based on the entire hospital population and in some instances appears low, while if the above facts were taken into consideration a higher percentage would result.

3. It is requested that the following item be entered on page 8 of the education service report blanks:

9. Number of patients in hospital one week or less....................

4. It is urgently requested that your reports reach this office not later than the 10th of the month. This information is given out for circulation and publication, therefore prompt reports will be appreciated. It is also urged that your statistics be as accurate as possible.

5. If report blanks do not reach your hospital in time to comply with the above request, please wire this office immediately, as every effort is being made to obtain this information regularly.

EDUCATION SERVICE REPORTS.

[Statistical summary for the month of February, 1919.]

The data for the following summary is based on the education service reports submitted by 41 hospitals designated to function in physical reconstruction:

Walter Reed, Takoma Park, D. C.
Letterman, San Francisco, Calif.
Fort Bayard, N. Mex.
No. 2, Fort McHenry, Md.
No. 3, Rahway, N. J.
No. 6, Fort McPherson, Ga.
No. 7, Roland Park, Md.
No. 8, Otisville, N. Y.
No. 9, Lakewood, N. J.
No. 10, Boston, Mass.
No. 11, Cape May, N. J.
No. 16, New Haven, Conn.
No. 19, Oteen, N. C.
No. 20, Whipple Barracks, Ariz.
No. 21, Denver, Colo.
No. 24, Parkview, Pa.
No. 26, Fort Des Moines, Iowa.
No. 28, Fort Sheridan, Ill.
No. 29, Fort Snelling, Minn.
No. 30, Plattsburg Barracks, N. Y.
No. 31, Carlisle, Pa.
No. 36, Detroit, Mich.
No. 39, Long Beach, Long Island, N. Y.
Fort Sam Houston, Tex.
Fort Riley, Kans.
Camp Custer, Mich.
Camp Devens, Mass.
Camp Dix, N. J.
Camp Dodge, Iowa.
Camp Gordon, Ga.
Camp Grant, Ill.
Camp Jackson, S. C.
Camp Kearny, Calif.
Camp Lee, Va.
Camp Lewis, Wash.
Camp Meade, Md.
Camp Mills, Long Island, N. Y.
Camp Pike, Ark.
Camp Sherman, Ohio.
Camp Travis, Tex.
Camp Upton, Long Island, N. Y.

STAFF.

The educational staff for February (1,827) shows an increase of 572 over that of January (1,255 and an increase of 693 over that of December, 1918. It should be noted that 41 hospitals reported for the month of February, an increase of 11 from the preceding month. Excluding duplicates, the figures for the educational staff in the 41 hospitals are as follows:

Commissioned officers	210
Noncommissioned officers	428
Enlisted men	383
Reconstruction aides	715
Other civilian employees:	
Men	67
Women	24
Total	1,827

PATIENTS.

The number of patients registered and dismissed from the above-mentioned 41 hospitals is as follows:

Number of patients Feb. 1	33,675
New admissions during February	31,347
Total during February	65,022
Number of patients S. C. D.	1,473
Number of patients returned to duty	21,278
Number of patients transferred	2,474
Number of patients returned to camp for discharge	4,180
Number of patients died, deserted, and otherwise disposed of	2,142
Total	31,547
Number of patients in hospitals on Feb. 28	33,475

Of the number of patients receiving S. C. D. (1,473), about 14 were hopeless or institutional cases, 130 were unable to return to their old occupations, while 1,329 were not in need of further training or retraining.

WARD WORK.

Work in the wards is divided into ward handicrafts and ward academic work. The figures for the number of enrollments in all educational work comprise the number of enrollments on the 1st of the month plus admissions during the month. This method aims to give full credit to the hospital for its educational work.

Work in wards is steadily increasing, new crafts and academic subjects being taken up whenever there is the demand. The increase in enrollments emphasizes this work for therapeutic value. The demand for instructors and reconstruction aides in hospitals functioning in physical reconstruction also emphasizes the value of this work. A total enrollment of 10,192 for handicrafts is composed of the following:

Work with textiles (knitting, weaving, etc.)	3, 612
Woodworking (carving, toys, etc.)	1, 808
Reed, cane, and fiber work	1, 555
Work in applied pattern (lettering, etc.)	284
Metal work (jewelry, etc.)	1, 124
Leather, cardboard, and binding	651
Work in plastic materials (pottery, etc.)	362
Unclassified enrollments	796
Total	10, 192

Ward work in academic subjects shows a total of 1,408, thus giving a total of ward enrollment (academic and handcrafts) of 11,456. The academic subjects are practically the same as those taught in previous months. The subjects and enrollments are as listed:

Reading	168	Shorthand	66
English	199	Spanish	18
Spelling	85	Drafting	6
Arithmetic	146	Advertising	1
Penmanship	173	Telegraphy	6
Higher mathematics	18	Civics	1
Science	17	Speech correction	1
History	9	Italian	1
Drawing	79	Adding machine	3
Typewriting	169	Salesmanship	3
Agriculture (reading)	8	Study (miscellaneous)	219
Bookkeeping	34		
Business English	23	Total	1, 521
Civil service	47	Ward work	10, 192
Lip reading	13		
French	8	Grand total	11, 713

SHOP AND SCHOOL.

I. General courses, which include academic and professional subjects.
II. Technical courses, which include—
    (*a*) Shop and trades; e. g., electrician, machinist, etc.
    (*b*) Commercial; e. g., typewriting, shorthand, etc.
    (*c*) Agriculture; e. g., gardening, crop study, etc.
III. Recreational courses, which include drill, physical culture, hospital service, etc., prescribed by the war surgeon.

The enrollment in each division and subdivision is given as follows:

I. General courses		5, 845
II. Technical courses:		
(*a*) Shop and trades	4, 611	
(*b*) Commercial	3, 276	
(*c*) Agriculture	1, 027	
		8, 914
III. Recreational courses		3, 261
		18, 020
Ward work		11, 713
Total		29, 733

Subtracting the number dropped during the month of February (8,986), the number of enrollments on February 28 remains 20,747. The number of individuals, excluding duplicates, enrolled in educational work is 16,296. The total number of patients registered in the 41 hospitals and available for educational work during February is 63,428. Approximately 26 per cent of the patients in reconstruction hospitals are enrolled in some form of educational work.

TYPES OF CASES IN EDUCATIONAL SERVICE.

The types of cases of disability showing the greatest number of enrollments are:

Orthopedic	3, 962
Pulmonary tuberculosis	2, 338
Diseases—wounds	1, 004
Amputations	865
Functional neurosis	435
Wound or injury of nervous system	481
Cardiovascular	340
Eye, ear, nose, and throat	336
Arthritis	248
Insanity	165
Nephritis	158
Gassed	154
Gastrointestinal	106
Severe injury—face and jaw	98
Venereal disease or sequelæ	73
Blindness	53
Other general medical	760
Other general surgical	732
Convalescent	1, 044

The following items are combined monthly totals up to February 28, and represent all hospitals designated to function in physical reconstruction:

Total hospital population	196, 655
Total patients enrolled in educational work	49, 977
Total number of enrollments	94, 569

NOTE.—In calculating the percentage of patients enrolled in educational work, effort has been made to keep a uniform basis. A certain per cent of the hospital population is made up of short-time patients (one week or less), patients confined to wards on account of contagion, psychopathic patients, etc. On account of administrative difficulties and various opinions regarding the eligibility of such patients for educational work, no uniform rules or regulations for excluding these patients can be made. Therefore the percentage is based on the entire hospital population and in some instances appears low, while if the above facts were taken into consideration a higher percentage would result.

COURSES SHOWING AN ENROLLMENT OF 100 OR ABOVE DURING FEBRUARY, 1919.

WARD WORK.

HANDCRAFTS.

Basketry	1, 474	Whittling	251
Knotting	1, 083	Carpentry	153
Bead work	925	Rug making	135
Weaving	825	Block printing	131
Carving	755	Needlework	128
Knitting	708	Painting	121
Toy making	542	Rake knitting	118
Leather work	494	Jewelry	97

ACADEMIC.

English	199	Reading	168
Penmanship	173	Arithmetic	146
Typewriting	169		

SHOP AND SCHOOL.

I. GENERAL COURSES.

Penmanship	1, 021	Reading	389
Arithmetic	988	Higher mathematics	222
English (foreign and beginners)	690	Civil service	112
English	680	Rapid calculation	101
Spelling	425	Spanish	101

II. TECHNICAL COURSES.

(*a*) SHOP AND TRADES.

Auto repair	701	Telegraphy	317
Auto mechanics	650	Electrician	213
Woodworking	380	Machinist	100
Drafting	372	Clay Modeling	100
Carpentry	372		

(*b*) COMMERCIAL.

Typewriting	1, 441	Business courses	248
Bookkeeping	515	Salesmanship	167
Shorthand	359	Business correspondence	163

(*c*) AGRICULTURAL.

Farm	270	Gardening	111
Animal husbandry	208	Greenhouse	93
Crop study	152		

III. RECREATIONAL COURSES.

Physical training	1, 279	Light therapeutics	164
Calisthenics	696	Games	146
Hospital service	356	Special duty	106
Curative walks	226		

TABLE I.—*Enrollment in ward and shop and school for February, 1919, as shown by education service reports.*

Hospitals.	Ward work.			Shop and school.		
	Enrollments during month.	Dropped.	Total at end of month.	Enrollments during month.	Dropped.	Total at end of month.
Walter Reed	869	287	582	1, 169	675	484
Letterman	788	110	678	1, 005	307	698
Fort Bayard	229	82	147	331	121	210
No. 2	65	13	52	980	246	734
No. 3	1, 225	219	1, 006	1, 018	211	807
No. 6	456	276	180	567	391	176
No. 7	....	....	....	180	5	175
No. 8	213	31	182	393	183	210
No. 9	836	565	271	792	283	509
No. 10	192	46	146	647	233	414
No. 11	80	38	42	1, 352	130	1, 222
No. 16	253	36	217	610	127	483
No. 19	512	56	456	408	107	301
No. 20	54	14	40	102	30	72
No. 21	275	160	115	41	4	37
No. 24	44	....	44	64	....	64
No. 26	490	156	334	1, 400	158	1, 242
No. 28	307	45	262	697	241	456
No. 29	470	261	209	589	305	284
No. 30	108	55	53	101	19	82
No. 31	....	....	....	238	6	232
No. 36[1]	7	....	7	....	....	....
No. 39	....	....	....	192	....	192
Sam Houston	330	107	223	793	258	535
Riley	240	104	136	212	99	113
Custer	163	50	113	358	91	267
Devens	287	180	107	97	36	61
Dix	426	145	281	179	47	132
Dodge	241	....	241	797	103	694
Gordon	178	123	55	363	96	270
Grant	125	26	99	266	85	181
Jackson	642	485	157	106	39	67
Kearny	6	....	6	135	7	128
Lee	162	....	162	217	....	217
Lewis	276	20	256	220	15	205
Meade	334	138	196	366	123	243
Mills	57	26	31	119	12	107
Pike	203	32	171	133	8	125
Sherman	233	74	159	283	113	170
Travis	218	17	201	349	91	258
Upton	119	4	115	141	....	141
Total	11, 713	3, 981	7, 732	18, 020	5, 005	13, 015
Total (ward and shop and school)	....	....	....	29, 733	8, 986	20, 747

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[1] No patients at Detroit.

TABLE II.—*Data taken from the education service reports of February, 1919.*

Hospitals.	Number of—				The ratio of men enrolled in educational work to officers, instructors, reconstruction aides, and patients in hospitals is as the following figures to 1.		
	Commissioned officers on staff.	Instructors and reconstruction aids.	Patients in hospitals.	Individuals enrolled in educational work.	Commissioned officers on staff.	Instructors and reconstruction aides.	Patients in hospitals.
Walter Reed	9	139	3, 051	1, 250	139	9	0. 41
Letterman	7	64	1, 723	930	133	15	.54
Fort Bayard	8	46	1, 078	367	46	8	.34
No. 2	9	45	2, 745	881	97	19	.32
No. 3	5	90	1, 787	997	199	11	.56
No. 6	4	52	2, 642	891	223	17	.34
No. 7	....	29	162	43	....	1	.27
No. 8	5	21	712	218	44	10	.31
No. 9	4	59	1, 248	766	192	13	.61
No. 10	5	42	702	388	77	9	.55
No. 11	4	33	1, 006	508	127	15	.50
No. 16	2	47	504	368	184	8	.73
No. 19	6	51	1, 430	663	94	11	.39
No. 20	5	11	349	100	20	9	.29
No. 21	8	29	1, 013	271	38	9	.27
No. 24	4	17	754	91	23	5	.12
No. 26	8	92	1, 236	703	88	8	.57
No. 28	9	123	1, 829	651	72	5	.36
No. 29	6	61	1, 369	531	89	9	.39
No. 30	1	12	659	183	183	15	.28
No. 31	4	48	405	125	31	3	.31
No. 36[1]	3	48	199	7	15	....	.04
No. 39	4	9	424	133	33	15	.31
Sam Houston	4	33	1, 897	535	134	16	.28
Riley	6	36	2, 149	245	41	7	.11
Custer	11	24	924	285	20	12	.31
Devens	3	25	1, 518	261	87	10	.17
Dix	3	29	3, 801	516	172	18	.14
Dodge	6	43	3, 120	431	72	10	.14
Gordon	7	21	1, 438	242	35	12	.17
Grant	7	44	1, 070	174	25	4	.16
Jackson	7	15	1, 897	266	38	18	.14
Kearny	9	4	866	91	10	23	.11
Lee	4	16	1, 942	101	25	6	.14
Lewis	6	18	2, 253	248	42	14	.11
Meade	5	23	2, 274	693	139	30	.30
Mills	1	12	1, 181	55	55	5	.05
Pike	4	33	2, 296	278	70	8	.12
Sherman	2	32	3, 064	320	160	10	.10
Travis	8	18	2, 539	334	42	19	.13
Upton	3	19	2, 172	256	85	13	.12
Total	210	1, 584	63, 428	16, 296	78	10	.26

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[1] No patients at Detroit.

TABLE III.—*Enrollment in divisions of ward, shop, and school and percentage of patients enrolled in educational work during February, 1919.*

Hospitals.	Ward work.		Shop and school.			Total.	Number of individuals enrolled.	Patients in hospital.	Per cent enrolled in educational work.
	Handcrafts.	Academic.	I. General courses.	II. Technical courses.	III. Recreational courses.				
Walter Reed	733	136	262	615	292	2,038	1,250	3,051	41
Letterman	723	65	184	412	409	1,793	930	1,723	54
Fort Bayard	207	22	139	192	(1)	560	367	1,078	34
No. 2	(1)	65	328	532	120	1,045	881	2,745	32
No. 3	967	258	429	514	75	2,243	997	1,787	56
No. 6	399	57	94	273	200	1,023	891	2,642	34
No. 7	(1)	(1)	51	98	31	180	43	162	27
No. 8	208	5	126	87	180	606	218	712	31
No. 9	836	(1)	110	271	411	1,628	766	1,248	61
No. 10	144	48	332	325	(1)	849	388	702	55
No. 11	40	40	357	669	326	1,432	508	1,006	50
No. 16	253	(1)	81	133	396	863	368	504	73
No. 19	512	(1)	204	204	(1)	920	563	1,430	39
No. 20	9	45	45	57	(1)	156	100	349	29
No. 21	273	2	14	27	(1)	316	271	1,013	27
No. 24	44	(1)	26	38	(1)	108	91	754	12
No. 26	401	89	493	703	204	1,890	703	1,236	57
No. 28	293	14	213	484	(1)	1,004	651	1,829	36
No. 29	460	10	203	386	(1)	1,059	531	1,369	39
No. 30	108	(1)	29	72	(1)	209	183	659	28
No. 31	(1)	(1)	31	82	125	238	125	405	31
No. 36	[2] 7	(1)	(1)	(1)	(1)	7	7	199	4
No. 39	(1)	(1)	108	58	26	192	133	424	31
Sam Houston	234	96	302	445	46	1,123	535	1,897	28
Riley	208	32	15	197	(1)	452	245	[3] 2,149	11
Custer	135	28	35	208	115	521	285	924	31
Devens	283	4	41	56	(1)	384	261	1,518	17
Dix	426	(1)	90	89	(1)	605	516	3,801	14
Dodge	174	67	305	392	100	1,038	431	3,120	14
Gordon	178	(1)	190	173	(1)	541	242	1,438	17
Grant	109	16	113	153	(1)	391	174	1,070	16
Jackson	417	225	83	23	(1)	748	266	1,897	14
Kearny	(1)	6	49	86	(1)	141	91	866	11
Lee	115	47	169	48	(1)	379	101	1,942	14
Lewis	264	12	165	55	(1)	496	248	2,253	11
Meade	289	45	64	241	61	700	693	2,274	30
Mills [4]	57	(1)	96	23	(1)	176	55	1,181	5
Pike	189	14	27	106	(1)	336	278	2,296	12
Sherman	178	55	166	117	(1)	516	320	3,064	10
Travis	218	(1)	38	185	126	567	334	2,539	13
Upton	101	18	38	85	16	260	256	2,172	12
Total	10,192	1,521	5,845	8,914	3,261	29,733	16,296	63,428	26

[1] No figures on reports.
[2] No patients at Detroit.
[3] Hospital population for base hospitals probably in error.
[4] No educational officer at Mills.

SUPPLEMENTARY SUMMARY.

The low percentage of patients enrolled in educational work in the base hospitals is explained by the following:

The hospital population for the base hospitals in most instances is exceedingly large, as shown by the education service reports for February. In giving the number of patients throughout the month it is probable that all short-time patients were included; that is, patients who remained in the hospital for a few days or one week while waiting diagnosis or assignment to special hospitals, convalescent centers, etc. Such patients do not belong to the hospital population proper and are not eligible to the education service of that hospital. In calculating the percentage enrolled it is evident that the above-mentioned patients have been included.

The general and base hospitals have been ranked according to their percentage of patients enrolled in educational work as shown below. In view of the fact that the base hospitals and general hospitals present different problems and are different types of hospitals, they have been ranked separately.

General hospitals.	Per cent.	Rank.	General hospitals.	Per cent.	Rank.
No. 16, New Haven	73	1	Fort Bayard	34	12.6
No. 9, Lakewood	61	2	No. 2, Fort McHenry	32	14
No. 26, Fort Des Moines	57	3	No. 8, Otisville	31	16
No. 3, Rahway	56	4	No. 31, Carlisle	31	16
No. 10, Boston	55	5	No. 39, Long Beach	31	16
Letterman	54	6	No. 20, Whipple Barracks	29	18
No. 11, Cape May	50	7	No. 30, Plattsburg	28	19
Walter Reed	41	8	No. 21, Denver	27	20.5
No. 29, Fort Snelling	39	9.5	No. 7, Roland Park	27	20.5
No. 19, Oteen	39	9.5	No. 24, Parkview	12	22
No. 28, Fort Sheridan	36	11	No. 36, Detroit	4	23
No. 6, Fort McPherson	34	12.5			

Base hospitals.	Per cent.	Rank.	Base hospitals.	Per cent.	Rank.
Custer	31	1	Lee	14	8.5
Meade	30	2	Travis	13	11
Sam Houston	28	3	Upton	12	12.5
Gordon	17	4.5	Pike	12	12.5
Devens	17	4.5	Lewis	11	15
Grant	16	6	Kearny	11	15
Dix	14	8.5	Riley	11	15
Dodge	14	8.5	Sherman	10	17
Jackson	14	8.5	Mills	5	18

(*Cir. Letter No. 173, Surgeon General's Office, April 15, 1919.*)

Report of Physiotherapeutic Treatments.

1. It is requested that the director of physiotherapy transmit to the Surgeon General, attention Division of Physical Reconstruction, Physiotherapeutic Section, weekly reports, in duplicate, of all physiotherapeutic activities.

2. It is requested that the first report shall be for the week ending April 26, 1919.

DIVISION OF PHYSICAL RECONSTRUCTION, PHYSIOTHERAPEUTIC SECTION.

WEEKLY REPORT, WEEK ENDING ...., 1919.

.... Hospital ....

Total number of patients treated ....
Total number of treatments given ....
Total number of aides on duty ....
Average number of massages per aide ....
Total number commissioned personnel ....
Total number enlisted personnel ....
Total number cases received from:
- Surgical division—
  - General ....
  - Orthopedic ....
  - Neurosurgical ....
- Medical division—
  - Internal ....
  - Neuropsychiatric ....
  - Tubercular ....

Total number of new cases ....
Largest number in one day ....
Smallest number in one day ....
Average number per day ......
Number cases discontinuing treatment:
- (*a*) For return to duty ....
- (*b*) For discharge ....
- (*c*) For operation ....
- (*d*) For furlough ....
- (*e*) For A. W. O. L. ....

[1] Names and dates of changes of personnel:

(*a*) Arrivals ....
(*b*) Transfers ....
(*c*) On leave ....

Types of treatments.	Number of treatments.		Total.
	Department.	Wards.	
Massage treatments by aides	....	....	....
Massage treatments by enlisted men	....	....	....
Radiant light and heat	....	....	....
Electrotherapy: Bristow, galvanic, faradic, sinusoidal, high-frequency, static	....	....	....
Ultra-violet	....	....	....
Hydrotherapy: Incandescent-light bath cabinet, needle and shower bath, douche, contrast baths, continuous baths, Nauheim baths, packs	....	....	....
Mechanotherapy	....	....	....
Exercises: Passive, passive-active, active, assistive, corrective	....	....	....
Gymnasium	....	....	....
Grand total	....	....	....

....
Director of Physiotherapy.

Noted ....

....
Commanding Officer.

(*Cir. Letter No. 175, Surgeon General's Office, April 15, 1919.*)

Information for the General Staff.

1. Circular Letter No. 163 requested a historical sketch of reconstruction work in your hospital. A recent request from the General Staff has been made for accurate data regarding work of the Division of Physical Reconstruction.

2. It is desired that chief educational officers in all hospitals functioning in physical reconstruction prepare the historical sketch asked for in Circular Letter No. 163 at once, bringing the account down to March 31.

3. To complete the work as requested in Circular Letter No. 163, the final sketch of work in your hospital can take up the account from the point at which this preliminary report leaves off; that is, April 1.

4. Unmounted photographs depicting important phases of the work are also desired by the General Staff.

5. Case studies giving accounts of individual patients and the service rendered them by reconstruction department are also desired.

6. This preliminary report should be received by the Division of Physical Reconstruction, Surgeon General's Office, not later than April 25.

(*Cir. Letter No. 174, Surgeon General's Office, April 16, 1919.*)

Books for Use of the Educational Service.

1. The library war service of the American Library Association will furnish, upon request, all or any of the books on the attached list for the use of the educational service.

2. Your attention is invited to Circular Letter No. 69.

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[1] Note on separate sheet all changes in personnel.

Title.	Author.	Publisher.	Date.	Price.
ARCHITECTURE AND MECHANICAL DRAWING.				
Concrete and Stucco Houses	Hering, C. C	McBride	1912	$2.50
Reclaiming the Old House	Hooper, C. E	do	1913	2.50
Bungalows	Saylor, H. H	Winston	1911	2.57
Inexpensive Homes of Individuality	do	McBride	1915	.50
The New Interior, Modern Decorations for the Modern House.	Adler, H. H		1916	
The Farmer his own Builder	Roberts, H. A		1918	
Engineering Workshop Drawing	Spooner, H. J		1914	
Making Floors	McClure, Abbott			
Making a Garage	Ellis, A. Raymond	McBride		
Architectural Drawing	Ediminster, E. F			
Effective Methods in Mechanical Drawing	Evans	Hammett		
Simplified Mechanical Drawing	Fredericks	do		
Simplified Mechanical Perspective	do	do		
Mechanical Drawing for Trade School	Svenson, C. L	Van Nostrand		
A Course in Mechanical Drawing	Rouillon, L. S	Prang Co.		
The Book of Little Houses		Macmillan		.50
A Book of House Plans	McBride, Nast, New York City.			
Ideal Homes in Garden Communities	do			
Building by a Builder	Howes, Benj. A	Doubleday		1.20
Half-Timber House	Jackson, A. W	McBride		2.00
Architectural and Building Construction Plates.	Jaggard, W. R	Putnam		1.50
Remodeled Farmhouses	Northend, Mary H	Little	1915	5.00
Craftsman Homes	Stickley, Gustave	Craftsman	1909	2.00
DRAWING.				
Freehand Perspective and Sketching	Norton, D. M	Pratt Institute		3.00
Pen Drawing	Maginnis, Chas. D	Bates	1913	1.00
METAL WORK.				
Art Metal Work	Payne, A. P	Peoria, Ill., Manual Arts Press.	1914	1.50
The New Tinsmith's Helper and Pattern Book	Williams, H. V		1917	
Practical Work	Rose			
Simple Soldering	Thatcher, E			
Handcraft in Wood and Metal	Hooper, John, & Shirley, A. J	Manual	1913	3.00
Cooper Work	Rose, A. F	Atkinson	1908	1.50
Silverwork and Jewelry	Wilson, H	Hogg (Scribner)	1912	2.00
POTTERY.				
Pottery for Artists and Craftsman and Teachers	Cox, G. H			
Modelling in Public Schools	Sargent, Walter	Hammett	1909	.60
Clay Work	Lester, K. M	Manual	1908	1.25
The Potter's Craft	Binns, Charles F		1910	2.00
HANDICRAFT.				
Craft of Handmade Rugs	Hicks, A. M	McBride	1914	2.00
Basket Maker	Turner, L. W	Davis Press		.75
Home Crafts of To-day and Yesterday	Buchanan, Florence		1917	
A Handbook of Weaves	Oelsner, G. H	Macmillan		
Dyes and Dyeing	Pellow			
The Handcraft Book	Jessop & Loyne			
How to Make Knots, Bends, and Splices	Biddle, T. G			
Knots, Splices, and Rope Work	Verrill, A. H			
Chair Seating with Cane and Raffia	Jenks	Hammett		
Work of Our Hands	Hall & Buck	do		
Seat Weaving	Perry, L. D	Manual Arts		
Hand Loom Weaving	Hooper, Luther	Hogg	1910	2.25
PRINTING AND LETTERING.				
Manuscripts and Inscription Letters	Johnson, Edward	Brentano	1909	1.50
Writing and Illuminating and Lettering	do	London, Hogg	1908	6/6
Wood-Block Printing	Fletcher, F. M	do	1916	5s.
Lettering	Stevens, J. F	Prang Co.		
Principles of Advertising Arrangements	Parsons, F. A			
Architectural Drawing and Lettering	Bourne, F. A., and others			
Practice of Typography. 4 vols. V. 1, Plain Printing Types. V. 2, Modern Book Composition. V. 3. Title Pages. V. 4. Correct Composition.	De Vinne, T. L	Century		(1)
Design and Color in Printing	Trezise, F. G	Inland Printing		
Modern Presswork	Gage, F. W	do		
DESIGN.				
Design in Theory and Practice	Batchelder, E. A	Macmillan	1910	1.75
Ornament and its Application	Day, L. F	Scribner	1904	3.25
Decorative Design	Chase, J. C		1915	
Theory and Practice of Color	Snow, B. E. & H. B			

[1] Four volumes, $2 each.

Title.	Author.	Publisher.	Date.	Price.
DESIGN—continued.				
Peasant Art in Hungaria		Lane		
Peasant Art in Scandinavia		do		
Peasant Art in Russia		do		
Peasant Art in Italy		do		
Bases of Design	Crane, Walter	Macmillan	1902	$2.25
Nature and Ornament. 2 vols	Day, L. E	Scribner	1909	5.00
Pattern Design	do	do	1903	3.00
Illustrations of Design	DeForest, Lockwood	Ginn	1912	2.00
Textile Designs	Dillaway, T. M	Bradley	1913	.50
Development of Design through Paper Cutting	Wuest, E. W		1916	.75
Peasant Art in Austria	Holme, George (ed.)	Lane	1911	5.00
Peasant Art in Sweden, Iceland, and Lapland	do	do	1910	5.00
Handcraft in Wood and Metal (design)	Hooper, John, & Shirley, A. J	Manual	1913	3.00
WOODWORKING (MANUAL TRAINING), WOOD CARVING, WOOD FINISHING.				
Farm Shopwork, Practical Manual Training	Mayne, D. D., and Brace, G. M.		1914	
Carpentry for Beginners	Adams, J. D		1917	
Furniture Upholstering	Stephanson, J. W		1914	
Bird Houses Boys can Build	Siepert	Hammett		
Woodwork for Secondary Schools	Griffith, Ira S			
Practical Gilding, Bronzing, and Lacquering	Scott, M. F			
Problems in Furniture Making	Crawshaw Manual			
Furniture Designing and Drafting	Nye, Alvan C	Comstock		2.00
Wood Carving, Design, and Workmanship	Jack, George T	Appleton	1903	1.40
A Textbook of Manual Training	Fox, Wm. P	Prang	1914	1.00
Series in Woodwork and Carpentry Elements of Woodworking. Elements of Construction. Constructive Carpentry. Inside Finishing	King, Charles	American Book Co.		
Elementary Cabinetwork for Manual-training Classes.	Selden, Frank H	Rand	1909	1.00
Wood Turning	Ross, George A	Ginn	1909	1.00
Elementary Cabinetwork for Manual-training Classes.	Selden, Frank H	Rand	1909	1.00
BASKETRY.				
Cane and Basketry Work	Blanchard, M. M	Scribner		
Indian Basketry and How to Make Other Baskets.	James, G. W	Hammett		
Handicrafts for the Handicapped	Buchanan, F			
How to Make Baskets	White, Mary	Doubleday		
Practical Basket Making	James	Hammett		
Raffia and Reed Weaving	Knapp, E. I			
Society for Deerfield Industries (portfolio of designs for raffia basketry).		Deerfield, Mass.		
BOOKBINDING.				
Bookbinding for Beginners	Bean, F	School, Arts		
Bookbinding as a Handwork Subject	Halladay	Dutton		
Booklet Making	Bailey, H. T	Manual Arts		
BUSINESS METHODS.				
Personal Efficiency, Applied Salesmanship	Allen, I. R		1915	
Writing an Advertisement	Hall, S. R		1915	
TOYS.				
Toys and Toy Making	Johnson, G. F	Longmans	1912	1.00
The Boy's Book of Mechanical Models	Stout, W. B		1916	
Toy Making in School and Home	Polkinghorne	Hubbell		
Tin-can Toys	Williams	St. Louis		
LEATHER WORK.				
Artistic Leather Work	Carter, E. E	Spon	1912	1.05
Leather Work	Mickel, Adelaide	Manual	1913	.70
COLOR.				
A color notation	Munsell, A. H	Ellis	1913	1.00
Color charts	do			1.00
Color Composition	Dow, A. W	Doubleday	1913	4.00
HOME DECORATIONS.				
Decoration of School and Home	Dillaway, T. M	Bradley	1914	2.00
A Course in House Planning and Furnishing	Calkins, Charlotte		1911	1.25
House Furnishing and Decorating	McClure, Abbot & Eberlein		1914	1.50
Cornell Reading Courses, Farmhouse Series: No. 1. House Decoration. No. 2. House Furnishing. No. 7. Arrangement of Household Furnishings.	New York State College of Agriculture.			
Your Home and Its Decoration	Sherwin-Williams Co		1900	2.00
Inexpensive Furnishings in Good Taste	Wallick, Ekin	Hearst	1915	1.25
AGRICULTURAL DRAFTING.				
Agricultural Drawing and the Design of Farm structures.	French, T. E., & F. W. Ives	McGraw	1915	1.25
Agricultural drafting	Howe, Charles B	Wiley	1913	1.25

(*Cir. Letter No. 182, Surgeon General's Office, April 19, 1919.*)

Exhibit of Reconstruction Work.

1. Articles for the war activities exhibit which were marked as loans, or whose return was equested, all personal articles bearing the name of the patient, and all articles clearly of great value are being returned, by express, to your hospital this week.

2. Articles not in the above classes, or the ones for whose retention special permission has been granted, are being retained for future exhibitions of reconstruction work.

At the American Medical Association at Atlantic City, June 9 to 14, space has been reserved for a display of physical reconstruction work. Each hospital should send in a few exhibits which will tell the story of reconstruction. Medical men will be specially interested in the curative value of the work. Pictures of the injury and pictures of the methods used furnished with the exhibit will be especially valuable. It is suggested that consultation between the educational officers and the medical staff in the hospital will best bring out the types of exhibits.

3. Send only articles that can become permanent property of the Surgeon General's Office. Send all shipments to the Washington office unless contrary directions are given from this office.

4. In selecting exhibit give preference to the following types:

A. Series of articles, pictures, and descriptions showing the continuous progress of a patient's recovery. If the data regarding patient's condition, his education, his social and vocational history, with samples of a series of articles made by him, showing progress from the diversional bed work to more purposeful ward and shop activity, with statements as to progress in recovery can be furnished, such exhibition will be vastly more valuable than merely isolated articles.

B. Exhibit of single articles with photographs showing the disability, if it be orthopedic, and statement of the curative effect are preferable to unidentified articles.

(*Cir. Letter No. 206. Surgeon General's Office, May 8, 1919.*)

Unit Courses of Study.

1. Sixty-five unit courses of study have been printed and distributed to the hospitals. A list of these courses is inclosed. From 50 to 100 copies of each were supplied to each hospital.

2. These courses are especially prepared and designed to assist instructors in making the curative educational activities more purposeful and valuable to the patients. They are planned to fit hospital conditions.

3. Have the courses been received by the chief educational officer? Make request for any not yet received.

4. What effort has been made to familiarize the instructor with these helps?

5. Inclosed is copy of report from the base hospital, Camp Dodge, showing the use made there of these courses. They are being used increasingly in other hospitals, but organized effort will increase usefulness.

U. S. ARMY BASE HOSPITAL, CAMP DODGE, IOWA, EDUCATIONAL DEPARTMENT.

The rehabilitation monographs or unit courses prepared under the direction of and issued by the Federal Board for Vocational Education in conjunction with the Surgeon General's Office have been in constant use in this hospital since their receipt.

They have proved of great value to the work here. While the courses have not been taken as outlined in every instance, they have been used in the following manner:

1. The course as prepared has been placed in the hands of the instructors of that subject and carefully studied.

2. A careful study of the work already offered here has been made in comparison with the suggestions in the monograph.

3. A careful survey of the results obtained in the work here has been made.

4. A careful survey of the needs of this particular school has been made.

5. From the above information the instructors, head aides, and supervisors have compiled courses particularly adapted to this school.

We have found these courses of great value to us in our work here. They have filled a place that nothing else could have filled.

(*Cir. Letter No. 214, Surgeon General's Office, May 14, 1919.*)

Assignment of Trucks and Motor Cars to Educational Departments.

1. On April 28, 1919, this office requested the War Department to give regulations which will govern the use of motor trucks and automobiles assigned to the educational department of the base and general hospitals for the purpose of instruction in motor mechanics and in motor driving. The following extracts from the indorsement made by The Adjutant General on May 21, 1919, are:

> Furthermore, there is no objection to the use of this material in teaching soldiers under instruction to drive, provided that such trucks which have been repaired in the curative workshops be not diverted to the general transportation of supplies or material pertaining to the camp, post, or hospital, and that such automobiles which have been similarly repaired be not diverted to carrying officers, enlisted men, nurses, civilians, or any other personnel attached to the hospitals, with the exception of the necessary instructors. The possibilities for misuse of these vehicles gave rise to the objection on the part of the Motor Transport Corps to their being put into operation in any manner whatsoever. This objection has now been withdrawn, and you are authorized to use these reclaimed vehicles for giving instruction in driving under proper supervision, as outlined above.
>
> When vehicles that have been furnished for purpose of instruction are diverted to general use, an equivalent number shall be withdrawn from those assigned to the hospital by the Motor Transport Corps.
>
> When none of the vehicles assigned to the hospital for educational purposes can be repaired for giving instructions in driving, a part of the transportation regularly assigned to the hospital may be used for this purpose. There is also no objection to putting men on the trucks with the regular drivers for instruction purposes during the time these trucks are in use in the daily work of the different hospitals. In general, however, the use of serviceable vehicles for instruction purposes is not favored because of the rapid deterioration involved.

2. Statements have been made to the Motor Transport Corps that automobiles which have been reconstructed in the educational department of hospitals have been utilized by officers, enlisted men, nurses, civilians, and others in what have been termed "joy rides." Obviously, the regulations quoted above must be adhered to.

(*Cir. Letter No. 226, Surgeon General's Office, May 26, 1919.*)

Disposition of Physical Reconstruction Registers (Form 58).

1. Some uncertainty appears to exist concerning the disposition of Form 58. When the patient is transferred to an Army hospital functioning in physical reconstruction, his register should be sent immediately to the commanding officer of that hospital. A list of such hospitals follows. If the patient leaves the hospital under any other circumstances than tranfer to a reconstruction hospital, or is dropped from educational service, his register should be completed and sent immediately to the Office of the Surgeon General.

U. S. ARMY HOSPITALS MAINTAINING PHYSICAL RECONSTRUCTION FEATURES.

General Hospital, Fort Bayard, N. Mex.
General Hospital No. 2, Fort McHenry, Md.
General Hospital No. 3, Colonia, N. J.
General Hospital No. 6, Fort McPherson, Ga.
General Hospital No. 8, Otisville, N. Y.
General Hospital No. 11, Cape May, N. J.
General Hospital No. 16, New Haven, Conn.
General Hospital No. 19, Oteen, N. C.
General Hospital No. 20, Whipple Barracks, Ariz.
General Hospital No. 21, Denver, Colo.
General Hospital No. 24, Parkview, Pa.
General Hospital, No. 26, Fort Des Moines, Iowa.
General Hospital No. 28, Fort Sheridan, Ill.
General Hospital No. 30, Plattsburg Barracks, N. Y.
General Hospital No. 31, Carlisle, Pa.
General Hospital No. 41, Staten Island, N. Y.
General Hospital No. 42, Spartanburg, S. C.
General Hospital No. 43, Hampton, Va.
Letterman, San Francisco, Calif.
Walter Reed, Takoma Park, D. C.
Department Base Hospital, Fort Sam Houston, Tex.
Department Base Hospital, Fort Riley, Kans.

(*Cir. Letter No. 232, Surgeon General's Office, May 29, 1919.*)

Devices Used in Other Hospitals.

1. Under separate cover a package containing the following papers is being mailed. The papers are:

Bulletin No. 1, announcing the department of telegraphy at General Hospital No. 26, Fort Des Moines, Iowa. The bulletin contains good information regarding telegraphy and can be commended as an example of good intra-hospital educational advertising.

The folder contains series of typewriter exercises developed at General Hospital No. 26, Fort Des Moines, Iowa. This folder is given to students in typewriting, and the students copy the exercises lesson by lesson. It is a simple device which enables patients to work independently without much personal attention from the instructor and without textbook. Students finishing this series of exercises have written 20 to 30 words per minute successfully.

Complete set of small pamphlets of rehabilitation monograph series issued by the Federal Board for Vocational Education. This complete set is forwarded, thinking that it will be convenient for educational officers' information and files. Supplies of these circulars can be secured from the Federal board for distribution to the patients.

(*Cir. Letter No. 229, Surgeon General's Office, June 2, 1919.*)

Personnel in Educational Service.

1. The rapid return of wounded from overseas precipitated by the armistice, and the consequent sudden and extreme expansion of physical reconstruction in this country, demanded every person possibly available for educational service. All hospitals have been short-handed.

2. An urgent need still exists for all efficient, qualified instructors and for all such is likely to continue for several months. It is a patriotic service worthy of the best effort and attention of everyone. To assist our men to make up in any degree the losses which they have suffered, to inspire them with hope, and point the way to overcome handicap is a duty well worth while. It is hard to conceive how any teacher can do more for America and humanity in the same length of time than by continuing in this service until the task is done.

3. The Surgeon General urges all experienced, capable people to remain in the service.

4. With a reduction in the number of hospitals, it will, however, be possible to release some, and by concentrating personnel and equipment in the remaining hospitals, it is hoped to improve the efficiency of the staff and make possible a grade of service such as the work deserves.

5. The chief of the educational service is asked to give a classification of all officers, noncommissioned officers, enlisted men, aides, and civilian employees in his service, giving the following information:

(*a*) What is the latest date to which will remain willingly in the service?

(*b*) Note in figures his value to the service; i. e., 1, excellent; 2, very good; 3, good; 4, fair; 5, poor.

6. Every effort possible consistent with the good of the service will be made to release professional teachers in time to accept teaching positions for the next academic year. Assurance of this will be furnished to boards of education and employing officers in individual cases when officially requested.

7. These reports should be made with care and returned to this office within a week of the receipt of this communication.

(*Cir. Letter No. 230, Surgeon General's Office, June 2, 1919.*)

Final Historical Sketch.

1. Educational officers at hospitals now discontinuing reconstruction service should present brief historical sketches of the educational service covering the time from the report already submitted, in accordance with Circular Letter No. 163, to the time of the closing of the service.

2. The data regarding the numbers of men enrolled, dates of release of personnel, and dates at which various departments were closed is specially desired. Descriptive matter has probably been included in former report and need not be repeated in this one.

(*Cir. Letter No. 239, Surgeon General's Office, June 18, 1919.*)

Efficiency Report.

1. Inclosed is form for study of efficiency in educational service to be conducted from July 14 to 25, excluding Saturday and Sunday, thus giving 10-day basis.

2. Extra blanks are inclosed for duplicates, if you wish to retain copies in your records.

3. The completed form should be transmitted to the Surgeon General's Office not later than Tuesday, July 29.

INSTRUCTIONS FOR STUDY OF EFFICIENCY TO BE CONDUCTED FROM JULY 14 TO 25, INCLUSIVE, EXCLUDING SATURDAY AND SUNDAY.

1. A student period is defined as one man working one period one day. Periods necessarily vary in length. For purposes of this report use the following:

Thirty minutes to one and one-half hours, one period.
One and one-half to two and one-half hours, two periods.
Two and one-half to three and one-half hours, three periods, etc.

NOTE.—In general, periods less than 30 minutes should not be made a matter of record. If, however, for therapeutic reasons a shorter time is advisable, such periods may be included in this report. In ward activities these records may have to be matters of accurate estimate by patients and aides.

2. The various handcrafts taught by aides in the wards should not be listed separately, but grouped as "Ward crafts."

3. It is suggested that a similar form be used to gather the daily data and the total be transcribed on the inclosed form at the expiration of the time stated.

STUDY OF EFFICIENCY.

[July 14 to 25, inclusive, excluding Saturday and Sunday.]

Station.............................. Date submitted...........................

Instructor.	Rank.	Number of men enrolled.	Subjects taught.	Aggregate student periods.

(*Cir. Letter No. 253, Surgeon General's Office, July 5, 1919.*)

Weekly Report, Physiotherapy Department.

In order to attain uniformity in the weekly report, several items of which have been interpreted differently by different officers, it is suggested that you follow the directions below.

Treatments by heat, light, exercise, massage, hydrotherapy, etc., are all to be reported as separate treatments and count in the sum total.

The treatment of two or more injuries on a single patient counts the same as the treatment of a single injury; i. e., the baking and massage of arm and leg both would only count as two treatments.

Column 2, lines 2 and 3, refer to the largest and smallest number of cases treated in one day, not the new cases only, as some have thought.

Column 1, line 4, means the average number of massage treatments per day per aide.

It is directed that the next report be made out according to these suggestions.

(*Cir. Letter No. 255, Surgeon General's Office, July 7, 1919.*)

Assistance to Federal Board for Vocational Education.

1. This office is in receipt of information stating that the Federal Board for Vocational Education has found it necessary to withdraw many of its field agents from reconstruction hospitals. It is unfortunate if any compensable soldiers are discharged without knowing of the opportunities offered by the Federal Board for Vocational Education. You are instructed to see that each patient discharged from your hospital who may be a compensable case is informed of the opportunities offered by the Government through the Federal Board for Vocational Education, and that he is given the location of district offices of the Federal board, as well as the address of the national office, in order that he may get in communication with the board later.

2. You are directed to make every reasonable effort to procure names, addresses, and records of probable cases and send to this office, attention Section of Physical Reconstruction, for transmission to the Federal board, in case there is no representative of the board at your post. It is the desire of the Surgeon General that everything possible be done to acquaint the men with the opportunities available for them after discharge.

(*Cir. Letter No. 262, Surgeon General's Office, July 17, 1919.*)

Chief of Section of Physical Reconstruction.

1. On account of the importance of the work of physical reconstruction and the necessity of coordinating that work with other hospital activities, particularly with those of the medical and surgical services, the Surgeon General desires that a chief of the section of physical reconstruction be appointed at your hospital. The name of the officer so selected will be submitted to this office for approval, attention Hospital Division.

2. This officer should have charge of all hospital activities pertaining to physical reconstruction and should maintain liaison under the commanding officer with the medical and surgical services.

(*Cir. Letter No. 263, Surgeon General's Office, July 17, 1919.*)

Quarters for Reconstruction Aides.

1. Allowance in lieu of subsistence and quarters for reconstruction aides is payable from the appropriation for Medical and Hospital Department. This appropriation for the current fiscal year is very limited. Continuance of the work of physical reconstruction will depend in large measure upon the economy practiced in the expenditure of funds for all activities connected with this department.

2. With a view to reducing current expenses to a minimum, reconstruction aides should, wherever possible, be assigned to quarters on military reservations. To this end, commanding officers of hospitals are authorized to reduce their reported bed capacity to accommodate their personnel. In case it is considered impracticable or inadvisable to quarter reconstruction aides in government buildings, full report of all the facts will be made to this office, attention Hospital Division.

(*Cir. Letter No. 24, Surgeon General's Office, July 17, 1919.*)

Discharge of Patients Undergoing Physiotherapeutic Treatment.

1. In order that the maximum possible functional improvement may be assured, no patient undergoing physiotherapeutic treatment will be discharged without consultation with the director of physiotherapy.

(*Cir. Letter No. 282, Surgeon General's Office, August 15, 1919.*)

Admission of Naval Patients for Physical Reconstruction.

1. By authority of the Secretary of War you are hereby directed to admit to your hospital such patients from the Navy or Marine Corps as may be transferred for further treatment (for physical reconstruction) by the proper naval officers. When the patient is ready for discharge, report should be made to the proper naval authorities.

2. The subsistence charges prescribed by A. R. 1460, as amended (C. A. R. 69, 1918), will be billed by you, in duplicate in each case, direct to the commanding officer of the naval hospital or other naval formation from which the patient was received. The medicine charges will be separately billed in like manner.

(*Cir. Letter from the Surgeon General, August 31, 1918.*)

New Form for Educational Service Report.

1. A new form of educational service report is mailed under separate cover and should be used in making report for October.

2. This form is a more logical arrangement of the same material that was compiled previously. However, it should be studied carefully and plans laid to meet every requirement.

EDUCATIONAL SERVICE REPORT.

Month of ....

Station .... Date transmitted ....

A. STAFF.

[Register personnel throughout the month, regardless of transfer, etc. List individual only once and in activity in which major part of time is spent.]

	Commissioned officers.	Noncommissioned officers.	Enlisted men.	Supervising aides.	Head aides.	Aides.		Civilians.	
						Women.	Men.	Women.	Men.
Administration									
Teaching in ward									
Teaching in shop and school									
Total									

Staff—Summary.	Individuals.			
	Total number first of month.	Number added during month.	Number dropped during month.	Total number end of month.

B. TOTAL NUMBER PATIENTS IN HOSPITAL.

1. Total first of month.................... 3. Number withdrawn....................

2. New admissions.................... 4. Total end of month....................

C. PHYSICAL RECONSTRUCTION REGISTERS.

Physical reconstruction registers (Form 58) submitted to S. G. O. during month....................

Physical reconstruction registers (Form 58) sent to other hospitals during month....................

D. SUBJECT ENROLLMENTS AND AGGREGATE STUDENT PERIODS.

[As defined in instructions.]

Subject.	Subject enrollments.		
	C. W. S.	Ward.	Total C. W. S. and ward.
I. GENERAL COURSES.			
Academic, etc.			
1. Arithmetic			
2. Braille reading			
3. Civics			
4. Civil service			
5. English			
6. English for foreigners and beginners			
7. Geography			
8. Higher mathematics			
9. History			
10. Music (when instructive)			
11. Penmanship			
12. Reading			
13. Science			
14. Speech correction			
15. Spelling			
16. Miscellaneous			
Total (I)			

Subject.	Subject enrollments.		
	C. W. S.	Ward.	Total C. W. S. and ward.
II. TECHNICAL.			
a. Shops, trades, etc.			
1. Applied and fine arts			
2. Auto driving			
3. Auto mechanics			
4. Bench woodworking			
5. Cabinetwork			
6. Carpentry (rough)			
7. Concrete working			
8. Electricity			
9. General mechanics			
10. Leather, cardboard, and binding			
11. Machinery			
12. Metalwork			
13. Motion-picture operating			
14. Photography			
15. Printing			
16. Radio electricity			
17. Radio operating			
18. Reed, cane, and fiber work			
19. Sheet-metal work			
20. Shoe repairing			
21. Sign painting			
22. Telegraphy			
23. Vulcanizing			
24. Welding			
25. Woodworking (carving)			
26. Work in plastic material			
27. Work with textiles			
28. Jewelry			
Total (II–a)			
b. Commercial.			
1. Banking			
2. Bookkeeping and accounting			
3. Business English			
4. Commercial law			
5. General business courses			
6. Office machines (adding, etc.)			
7. Salesmanship and advertising			
8. Shorthand			
9. Typewriting			
Total (II–b)			
c. Agriculture.			
1. Animal husbandry			
2. Crop study			
3. Dairying			
4. Farm (general)			
Gardening.			
5. Field			
6. Garden			
7. Greenhouse			
8. Ward			
9. Horticulture			
10. Machinery			
11. Poultry raising			
12. Soils			
Total (II–c)			
Total (II–a, b, c)			
III. RECREATIONAL COURSES.			
1. Calisthenics			
2. Dancing			
3. Games			
4. Hospital service			
5. Light therapeutics			
6. Military drill			
7. Physical training			
8. Special duty			
9. Walks			
10. Music (when recreational)			
11. Miscellaneous			
Total (III)			
Grand total (I, II, III)			

E. INDIVIDUALS ENROLLED IN EDUCATIONAL SERVICE.

[Do not include those enrolled in recreational courses.]

	Number on roll first of month.	Number added during month.	Number dropped during month.	Number on roll end of month.
Ward (exclusive of those attending C. W. S.)				
Curative workshop				
Total				

1. Total number of patients in hospital during month
(Number on first of month plus new admissions.)
2. Total number of individuals enrolled during month
(Number on first of month plus new admissions.)
3. Percentage of patients enrolled in educational work
(Divide number of individuals enrolled by number of patients in hospital.)

(*Cir. Letter No. 323, Surgeon General's Office, Oct. 13, 1919.*)

ARMY MEDICAL MUSEUM.

Pathological Collection.

1. The Surgeon General expects that all medical officers will collect and ship pathological specimens to the Army Medical Museum, as provided in paragraph 135, Manual for the Medical Department, and in previous circulars from this office. The specimens should be accompanied by histories, and officers will receive credit for their contributions.

2. A statement is desired as to:
   (1) Whether your laboratory has already sent specimens to the museum.
   (2) Whether you have collected specimens and have them ready to ship to the museum.
   (3) Whether you have material on hand for making Kaiserling solutions.

3. Have you collected large containers for storing and shipping specimens, such as 5-gallon oil cans, crocks, and kegs?

(*Cir. Letter, Surgeon General's Office, June 18, 1918.*)

Surgical Pathological Materials.

1. Attention is directed to the establishment of a laboratory of surgical pathology, research, and experimental surgery at the Army Medical Museum and Library.

2. As there is practically no material in the collection at present, specimens from all the organs and tissues removed at operation should be preserved in the best possible manner and sent to the museum for study and exhibition purposes.

3. All material for microscopical study should be placed in 10 per cent formalin as soon as possible after removal for 24 to 48 hours, washed in running water, and transferred to 80 per cent alcohol. All specimens for exhibition purposes should be preserved intact, removing a piece for histological purposes so as to produce the minimal amount of damage. The exhibition specimen may be sent to the laboratory in Klotz's fluid or Kaiserling. If neither of these is available, use 10 per cent formalin. It is suggested that 10 per cent formalin be injected into the main artery of amputated limbs or the limbs be bisected.

4. Label all specimens with the patient's name and hospital number, using india ink or black lead pencil on stiff cardboard, cloth, or wood coated with melted paraffin.

5. It is recommended that methods for the shipment and packing of specimens conform in so far as possible to the instructions previously outlined in circulars relating to general pathological specimens. Microscopical specimens should be sent in wide-mouth bottles. Gross specimens may be sent in bottles, jars, barrels, and sealed tin cans, depending on size and character of the material. Several specimens may be packed together, but special care should be taken to see that the label is securely attached to each one. Oversea specimens should be shipped to the concentration points as directed in Special Circular No. 42 to American Expeditionary Force.

6. A brief essential history is requested of each case. Photographs of patients and prints of roentgenograms will be of value in certain cases. Photographs of inoperable cases, with histories, abnormalities, deformities, apparatus for treatment, and prosthesis are also desired for this collection.

7. In filing the specimen in the museum credit will be given to the contributor. If requested, opinions will be given regarding any specimen sent to the museum.

8. It is requested that special efforts be immediately instituted by both the surgical and laboratory services to insure the collection of this valuable and much-needed material.

(*Cir. Letter, Surgeon General's Office, November 16, 1918.*)

Collection of Surgical Pathological Material.

1. This material is to form the nucleus of a collection for exhibition as well as for research and study purposes for all who may wish to avail themselves of such an opportunity.

2. There is practically no material representing this specialty in the museum, which makes it especially important for you to exercise your individual efforts to see that all specimens are sent to the museum. Directions for the preservation and fixing of such material have already been sent to the chiefs of the laboratory services. A separate piece of tissue for microscopical study, fixed according to these directions, should accompany each gross specimen.

3. Clinical histories of all cases are desired.

4. Full credit will be given to the contributor of specimens. Opinions, if requested, will be given of any specimen.

5. The following outline is given as an aid and suggestion as to the character of specimens desired at present:

(*a*) Amputations; specimens from re-amputations; amputation neuromas.

(*b*) *Nonunion and delayed union.*—In these cases a piece of tissue from both bone fragments and intervening tissue is desired. Designate the portion from the proximal and distal fragments.

(*c*) Infections of bone and joints, including tuberculosis and syphilis, with bacteriological findings.

(*d*) Tumors.

(*e*) *Nerves.*—Tissue obtained from lesion of the extremities.

(*f*) Muscle and tendon lesions.

(*g*) Specimens in secondary operation of cases with bone grafts.

6. Packages should be addressed to the curator of Army Medical Museum.

(*Cir. Letter, Surgeon General's Office, December 5, 1918.*)

Pathological Material for the Army Medical Museum.

The objects of an autopsy are:

1. To determine the cause of death—Medicolegal.

2. To reveal the relations between the changes in the organs and the clinical symptoms—clinical pathology.

3. To obtain material for histological, bacteriological, and chemical study—pathogenosis; etiology.

4. To obtain permanent objective demonstrations of what disease does in the body—pathological anatomy; museum collection.

No autopsy is complete unless all of these objects are accomplished. To avoid conflict among them a systematic procedure in the conduct of the autopsy, and especially in the initial treatment of organs, is required.

The first cut into an organ, and the form in which an organ first reaches a fixative fluid, determine irrevocably what subsequent use can be made of the organ.

The following directions are designed to secure due regard to all the interests that center in a post-mortem examination, but the judgment and experience of the pathologist will often be taxed in deciding how best to deal with the varying conditions that arise. The pathologist should resolutely refrain from damaging a valuable museum specimen for the sake of a hasty demonstration.

THE INITIAL TREATMENT OF ORGANS.

Heart.—The best way to examine and permanently preserve a cardiac valvular lesion is to open the ventricles by a free incision upward from the apices, without touching the valves, examining the valves from below. An incision into each auricle permits examination from above. Chambers, valves, and orifices may then be packed in normal relations with cotton and the whole organ placed in fixative. Subsequently, windows may be cut, exposing muscular, arterial, and valvular lesions.

The usual method of opening the heart, following the course of the blood and exposing the valves freely, still permits of preserving the specimen for the museum. Care must then be taken to place the structures in exactly the form desired and keep them so while the specimen is hardening.

Lungs.—Remove the lung with bronchus up to tracheal bifurcation and with one lung include 3 or 4 inches of trachea.

Make one broad incision, and only one, beginning in the middle of the posterior border, running from apex to base, passing in front of the main bronchial tree, and continued forward to the anterior border. The bronchi may then be opened by scissors.

Preserve the posterior and larger portion for the museum, using the other portion for other purposes. A good museum specimen of lung requires that a fresh surface be cut after fixation and just before the specimen is mounted. Otherwise the surface is shrunken and the details of structure are lost.

Bacteriological and histological material should be obtained from the smaller portion. All of this portion of the lung should be saved for microscopical study, so that large sections may be made for the study of the topography of the lesions. Inflation of lungs before fixation is sometimes desirable.

When the lung is firmly adherent to the chest, the parietal pleura should be removed with the organ.

Spleen.—The spleen should be bisected through its long diameters. This organ requires thorough fixation.

Liver.—It is difficult or impossible to fix the entire liver without incision to permit access of fixative. Contracted cirrhotic livers, however, may be preserved uncut.

As a rule, a broad section at least 5 cm. thick should be cut transversely through the organ, or placed so as to include notable lesions. Many prefer to cut off the anterior third of the right lobe by a vertical section, which permits access of fluid and allows preservation of many large specimens which would otherwise be lost. Lesions of the gall bladder are best preserved for exhibition by hardening the viscus uncut, exploring it later. If opened at the autopsy, it should be washed free of bile and spread open for hardening. Gallstones should be replaced.

Stomach.—The best method of demonstrating gastric lesions is to fill the organ with Klotz's fluid No. 1 or 10 per cent formalin without distention, ligating esophagus and duodenum; harden for 24 hours, and examine through appropriate incisions.

If the stomach is opened immediately, incise along the middle of anterior surface and carefully adjust the folds while hardening. Pinning the edges or packing lightly with cotton may aid.

Intestines.—The intestine, cut through the mesenteric attachment, should be pinned out on convenient holder, as boxboard or shingle. The length of segment to be saved with the lesion. If whole of small intestine is involved, save portions of duodenum, upper ileum, and lower ileum.

If the ileum is involved but not the colon, save a portion of colon to prove its integrity.

With colitis it is desirable to show intact as well as diseased portions.

Excellent demonstrations of lesions of the colon may be obtained by washing out the contents gently and filling the organ, uncut and ligated at the ends, with Klotz's fluid No. 1 or 10 per cent formalin. Bisection of the hardened organ reveals many features which are lost in the flattened surface.

Kidney and adrenal.—Bisect kidneys through their long diameters. In cases of cystitis with pyelitis, remove kidneys, ureters, and bladder together, and harden in position.

Lesions of the adrenal, especially tumors, are well displayed if connected with the kidney.

Pancreas.—The pancreas may usually be preserved intact. This organ autolyses very rapidly, and it is often well to bisect it.

Bone marrow.—In the long bones the marrow will not harden well unless the shaft is sawn through lengthwise. In inflammatory lesions of the bones, and in many others, it is important to demonstrate the changes in the marrow. Here important colors are best preserved by prompt exposure of the cut surface to Klotz's fluid No. 1. A segment of rib excised from upper end of shaft of humerus is accessible and representative.

Lymph nodes and thymus.—In all diseases involving the lymphatic system representative portions of the lymphatic chains should be preserved. Chains rather than single nodes are desirable, and nodes on the outskirts of the main lesions are particularly important. The thymus or its remnants should be removed in all conditions involving the lymphatic system.

Skin.—Significant lesions of the skin may be excised, uniformly stretched out, pinned to wooden support, and placed in fixative, specimen side down. Unless firmly fastened, the skin contracts very strongly, becoming wrinkled and deformed. Color preservation in the skin requires unusual care.

Amputated limbs.—The skin strongly resists penetration by fixatives, and in order to preserve an arm or leg it is necessary either to inject Klotz's fluid No. 1 or 10 per cent formalin through the main artery, or to bisect the whole member through the shaft of the bone. Locate this line of cleavage so as to display the lesions of the soft parts.

Careful and well-adapted dissections are necessary to demonstrate the effects of wounds, infections, and tumors. When time is available, it is recommended that the pathologist undertake such dissections of fresh material, using his best judgment and ingenuity to demonstrate the lesion.

Otherwise the museum prefers to receive such specimens hardened by injection through the artery, so that dry specimens of the bone lesion and wet specimens of the soft parts may be prepared, both of which are desired.

When such specimens are explored after the operation or at autopsy, the dissection should be limited or carefully designed to expose the lesion, and all parts affected should be saved.

Tumors.—These should be preserved in toto whenever possible, together with organs showing metastases. Bulky masses should be incised to facilitate fixation. All tumors removed by operation and all other characteristic surgical material are desired for the museum. Sections removed for microscopic diagnosis should, as a rule, be taken from the edge so as not to sacrifice the value of the gross specimen.

Nervous system.—It is desirable that the examination of the brain should precede the other steps in the autopsy. The method of preparation will depend on the end sought. Adequate fixation of the brain can be secured only by injecting the fixing fluid through the blood vessels or by cutting the entire brain into thin slices. Slicing the fresh brain, however, results in great distortion from unequal shrinkage and interruption of continuity of fiber tracts and other structures. On the other hand, injection of the brain before its exposure kills microorganisms, destroys the natural color, and also evidences of edema, congestion, and hyperemia, and alters the normal consistency. Accordingly, two procedures are outlined.

(1) As a routine procedure, expose the brain, examine it in situ, remove, examine further, weigh, and then immerse it uncut in a liberal amount of 10 per cent formalin. A small amount of sodium chloride may be added to bring the specific gravity of the fluid up to nearly that of the brain and thus reduce deformation by gravity during hardening. The brain should be supported on a soft cotton pad and turned at intervals of 12 hours for two or three days.

(2) In cases where extensive study of fiber tracts may be required and in some others (degenerations from trauma, hemorrhage, embolism, or specific toxines, and cases of cerebral tumor) injection with formalin may be done subsequent to an examination of the freshly exposed surface by a method described by Dr. W. G. MacCallum.

As the first step in the autopsy, remove the calvarium and raise a flap of dura so that cultures can be made and the fresh meninges studied. The larger meningeal vessels and venous sinuses must not be opened. Then replace the scalp and inject with 10 per cent formalin from the opened thorax into the carotids. Some leakage occurs, but not enough to make proper embalming of the face impossible.

Any gross sectioning of the brain in the fresh state will interfere seriously with subsequent examinations and may destroy its value for microscopic study.

Should it be necessary for medicolegal or other reasons to examine the interior of the brain immediately, it should be opened by a single cut, as recommended by Dr. Adolf Meyer, as follows: With a single sweep of a long, thin autopsy knife cut through both cerebral hemispheres in a plane parallel with and one-half inch above the Sylvian fissures.

It will be noted that this is not the usual horizontal cut passing through the longest axis of the hemispheres, but that the plane inclines downward sharply in front and upward toward the occiput. By this cut the structural relationships of the brain stem are left undisturbed, and at the same time the lateral and third ventricles and internal capsule can be explored. No further cuts should be made at this time, as the opening of the ventricles insures good fixation of the deeper parts. And even this cut should, save in very exceptional cases, be deferred until after the brain has been hardened for several days. It is especially important that if transverse cuts or additional longitudinal cuts are made, this should not be done until after the brain is hardened.

The spinal cord should be examined and removed. A chisel should not be used in cutting the spinous processes of the vertebræ, but saw and bone forceps only. Open the dura by slitting it posteriorly with a pair of small scissors. It is preferable to have the whole cord suspended in 10 per cent formalin, or the cord may be cut into three pieces and each piece sewed through the dura to a stiff card or thin board. When a cord must be sectioned further, transverse cuts may be made (preferably after fixation), but the attached dura should not be cut through, thus leaving each piece in its proper place in the dural sheath.

All nervous tissue that is to be examined microscopically should be handled with extreme care; otherwise post-mortem artefacts will confuse the pathological picture. Degenerations of nerves have often been simulated by artefacts due to rough handling.

FIXATION OF MUSEUM MATERIAL.

The Army Medical Museum recommends Klotz's fluid for the preservation of museum specimens. Its chief advantage is that specimens can be preserved and shipped in fluid No. 1.

A practical method for the camp hospital is to make up a liberal supply of Carlsbad salts, with which the fluid is readily prepared, and to have two or three large containers (large stone jar or barrel) filled with this fluid, into which specimens may be placed at the autopsy. Here they may be left until fixed and ready for shipment. The containers should be tightly covered.

Klotz's method.

Make up modified Carlsbad salts in quantity, as follows:

Potassium sulphate	grams	40
Sodium or potassium nitrate	do	760
Sodium chloride	do	360
Sodium bicarbonate	do	400
Sodium sulphate	do	440
Fluid No. 1:		
Carlsbad salts	do	375
Chloral hydrate	do	375
Formalin	do	375
Water	liters	15
Fluid No. 2:		
Carlsbad salts	grams	375
Chloral hydrate	do	150
Formalin	do	75
Water	liters	15

Fix three to five days, or longer, in No. 1. Wash three to five hours in running water. Preserve in No. 2.

The chief limitation of this method is that it does not give fully satisfactory results for histological studies, especially after long fixation, Hence it is necessary to fix additional material in formalin or other fluid.

In many Army laboratories the materials for Kaiserling's fluid are on hand and in such cases this fluid is recommended. Specimens should be shipped in fluid No. 3.

When the use of neither Klotz's nor Kaiserling's method is practicable, specimens should be well fixed and shipped in 10 per cent solution of formalin, and, in general, unless formalized tissues for histological purposes can be sent in addition to Klotz's or Kaiserling's material, it is better to fix and ship the entire specimen in formalin. If forwarded promptly, the colors can be partly restored by appropriate treatment after reaching the museum.

All neurological specimens should be fixed and shipped in formalin.

FIXATION OF HISTOLOGICAL MATERIAL.

The best general fixative for histological material is 5 to 10 per cent solution of commercial formalin.

Formalin, however, is a fixative, not a good preservative.

After thorough fixation, tissues remaining in formalin steadily lose differential staining quality. Hence it is necessary after fixation for 24 to 48 hours (longer with bulky specimens) that histological material be washed free from formalin in running water and preserved in 80 per cent alcohol. For rapid diagnostic work washing may be omitted.

Nerve tissue, however, may be kept almost indefinitely in formalin.

Other fixatives may give better results for special purposes, but require much greater care and attention in subsequent handling.

Of these may be recommended:

(1) Zenker's fluid.
(2) Muller-formol.

WHAT MATERIAL IS WANTED BY THE ARMY MEDICAL MUSEUM.

1. The museum is charged with the responsibility of collecting every form of original material which illustrates the effects of injury and disease and the results of treatment. Besides general medicine and surgery, full attention should be given to the specialties—eye, ear, nose, skin, etc.

Briefly, it may be said that all pathological material is of value for this purpose. It is the desire of the museum to collect material from all sources and to pursue the study of case groups where the hospital forces stop.

The project involves the collection of material for both gross and microscopic specimens.

2. In preserving material from autopsies, it is sound policy to include portions of all organs for histological study. Thus, in a case of salvarsan poisoning, the clinician and neurologist may be chiefly interested in the brain, the aurist in the cochlea, the ophthalmologist in the retina, but the proper study of such a case demands attention to all organs.

In case of Addison's disease it is not enough to remove a tuberculous adrenal. A score of such specimens is of no particular interest. In the study of Addison's disease one wants to investigate the abdominal sympathetic system, to search the abdominal fat for accessory adrenal tissue, and to determine the condition of all the glands of internal secretion. All such material, as well as the other organs or portions of them, should be saved for study.

In case of leucemia, all the lymphoid organs, bone marrow, thymus, as well as other organs should be saved for gross demonstration, if possible, certainly for microscopic study.

In a case of status lymphaticus, the heart and aorta, spleen, thymus, intestinal lymphatic structures, and ductless glands should be preserved.

In general, the pathologist must consider the special indications arising in each case, and in examining and preserving material he omits any one of the organs at the risk of sacrificing the chief value of the entire case.

Unless such rigid care and intelligence are constantly used, the Army will have collected by the end of the war a great mass of material of chiefly statistical value, but one which is rather less adapted to advanced and fruitful study than are many collections now in existence.

It is hoped that all medical officers will cooperate with the Army Medical Museum in gathering a collection of pathological material which will be as creditable to the medical profession of to-day as was the Civil War collection for its time.

3. The pathologist should endeavor to have the surgical operating room provided with proper containers and fixatives, and to acquaint the surgical staff with the methods and objects of the preservation of pathological material.

4. Pathological material loses significance when unaccompanied by clinical data. The museum desires copies of all autopsy records and clinical histories, or their essentials.

5. The Museum staff is prepared to undertake the study of difficult and doubtful cases, and to report the results upon request.

6. In filing the specimens in the museum due credit will be given to the pathologist for his work in the analysis of the lesions demonstrated.

7. It is recommended that material be shipped promptly as soon as the study of the case is completed and the local interest in it has passed. Owing to the frequent changes in the laboratory personnel, valuable material may be overlooked and lost.

(*Cir. Letter, Surgeon General's Office. Undated.*)

Reproduction of Interesting Lesions in Wax.

1. There is present at the Army Medical Museum an expert in the reproduction of various lesions of the skin in wax. A considerable number of models have been made during the war, and it is desired to make this collection as excellent and as representative as possible.

2. The following types of cases can be well represented in wax: Chronic or unhealed ulcers following various types of wounds, unhealed lesions resulting from gas burns, unusual scar formations, and unusual skin diseases. Such lesions can be most naturally reproduced by wax models,

and it is believed that many of the hospitals receiving cases from overseas have cases of this nature which should be reproduced for permanent record.

3. As it is impossible for the one worker in wax models to travel from place to place, it is requested that when such cases occur at any Army hospital they be reported to the Surgeon General's Office, attention the Laboratory Division, with a brief description of the case and probable permanence of the lesion at the time, accompanied by a rough unmounted photograph if possible to obtain the same.

4. It is intended to order especially interesting cases of this character to the Walter Reed Hospital for further treatment and for the production of the model, which will be a permanent exhibit in the Army Medical Museum.

(*Cir. Letter No. 121, Surgeon General's Office, March 4, 1919.*)

Collection of Mosquitoes.

It is desired that the collection of mosquitoes at the Army Medical Museum be representative of all species occurring at camps or posts where troops of the United States are stationed.

At the present time, the collection is very incomplete, and medical officers are directed to see that collections of these insects are made at the times and in the manner described in the following directions for collecting. These directions supersede those published from the Office of the Surgeon General, March 21, 1918.

Directions for collecting and forwarding mosquitoes.

Collections of mosquitoes should be made at each station at least biweekly at three periods during the 24 hours, i. e., early morning (5 to 6 a. m.), midday, and after 7 p. m. The time of collection will vary in different latitudes, but observation should soon determine the time when mosquitoes are most prevalent at each locality.

Mosquitoes may be collected by means of a suitable killer or by mosquito traps.

The best and most easily obtained killer is the so-called "chloroform tube." This is made by taking a rather large-mouth test tube, placing at the bottom some absorbent cotton saturated with chloroform, and covering this with a dry cotton plug, fitted so as not to move with the motion of the tube. The apparatus is closed with a tight cork. In use, the tube is inverted over the insect and the chloroform fumes quickly kill it. When killed, the insect should be carefully slid into one of the small mailing boxes provided. The tube should be kept corked when not in use and the chloroform frequently renewed.

Mosquito traps of various sorts have been devised and some of them have proven very useful. For daylight collecting, the ordinary biscuit tin or cracker box, lined with dark felt and placed in convenient locations, is suggested by Stevens as being very efficient. These tins should be placed in suitable locations during the night; the mosquitoes retreat into them as the sun rises. Small, screened boxes, having a small opening, and attached to window screens, are efficient mosquito traps for use at night. These same boxes can be used in unscreened rooms or in tents, a decoy light being placed so as to attract the insects.

Mosquitoes are most easily captured while at rest, in the early morning or during the day, and they should be looked for in dark corners and upon dark clothing hanging in closets. At night they may be captured on window screens or by means of traps, as indicated.

As the classification of these insects depends upon delicate markings on the wings and body, it is most essential that they be very carefully handled, as these markings are very easily removed. When dead, the insects are to be carefully slipped from the closed tube or trap into the box provided for their shipment. The box should have a wisp of absorbent cotton upon the bottom and the insect should be placed upon this. It is well not to place more than 25 insects in a box and care should be taken that they be not in contact with one another. A small amount of absorbent cotton should be placed over them and a few drops of formalin, carbon disulphide, or a small piece of camphor should be placed under the bottom layer of cotton. Care should be taken that the specimens are not wet either in collecting or in shipping. In using the chloroform tube, it should be emptied after each capture, so as to prevent injury to the insects by sliding backward and forward in the tube. If the insects contain blood, only a few should be placed in a box, owing to the liability of their rubbing together and thus effacing the characteristic markings.

The mailing boxes are to be plainly labeled with the name of the station, date, and hour of collection; name and rank of the collector; and each collection should be accompanied by a statement as to the presence of malaria, its type, dengue, and filariasis, and the number of cases, with the strength of the command.

Larvæ may be collected with a white enamel or agateware tablespoon. For shipping, they should be placed in a weak alcohol (60 per cent) or Fleming's solution in a vial without shoulder, the fluid filling the vial to the cork, so that no air space is left. Unless this is done, the motion of the fluid in transportation is liable to destroy some of the characteristics of the larvæ and render them of little or no value. The specimens should be carefully labeled and it is preferred that the label be placed inside of the vial.

Records of observation or investigation on the life history of mosquitoes and data as to the percentage of the different kinds of mosquitoes present are valuable, and such records are desired for filing with the collections for each post.

Additional shipping boxes will be furnished as needed and a report will be made to the collector of the species of mosquitoes present in his collections, so that the connection between the prevalent diseases which may be due to transmission by these insects may be correlated at the station as well as at this office. The collections will be mailed promptly, addressed to the curator, Army Medical Museum, Washington, D. C. It is important that insects be mailed promptly, as otherwise they are likely to become infected with mold and their value destroyed.

(*Cir. Letter No. 123, Surgeon General's Office, March 5, 1919.*)

Museum Specimens (Gas Lesions).

1. It is desired to obtain gross and microscopical specimens from patients who have lived for a considerable time after being gassed. There are now in hospitals many of these soldiers suffering in some cases from the results of this gassing and also from various other conditions.

2. Considerable material has been collected from acute lesions in men and in animals, and a certain amount of material is available showing the subsequent lesions in animals, but no specimens have been received from human sources which can be used to study the final changes and determine what, if any, permanent alterations result from exposure to the gas.

3. Should autopsies occur in any case giving a history of having been gassed, specimens will be carefully preserved and sent to the Army Medical Museum, even though there is apparently no change in the organs referable to the previous gassing. The respiratory tract is most important, but blocks of tissue should be sent from each organ. A careful history and protocol will accompany the specimens.

(*Cir. Letter No. 156, Surgeon General's Office, March 26, 1919.*)

CENSORSHIP OF MEDICAL PUBLICATIONS.

Cooperation of Editors of Medical Journals Requested.

Attention is directed to the inclosed memorandum issued by this office to medical officers of the Army.

The large number of medical officers recently joining the Medical Department direct from civil life, and unfamiliar with the Army regulations governing the publication of scientific papers, has resulted in a number of papers being published in various journals without authority from this office.

Editors of medical publications are requested to cooperate with this office in impressing upon medical officers the necessity for compliance with the inclosed memorandum.

It is requested that papers received from medical officers in the service which do not show that they have been referred to this office, and authority for publication granted by the Surgeon General, be forwarded direct to this office in order to obtain this authority.

In authorizing the publication of a paper this office does not necessarily signify its accordance with views or opinions expressed therein. It is, therefore, requested that editors refrain from appending any note or legend expressing the formal authorization of this office.

(*Memo. to editors of medical publications, Surgeon General's Office, March 27, 1918.*)

Censorship Requirements.

1. Attention of medical officers is directed to the provisions of paragraph 423, M. M. D.:

Medical officers will not publish professional papers requiring reference to official records or to experience gained in the discharge of their duties without the previous authority of the Surgeon General.

2. Numerous scientific papers written by officers of the Medical Department have recently appeared in the medical press without specific authority from this office. This practice will be discontinued and the above regulation will be strictly complied with.

3. Officers desiring publication of professional papers will submit two copies to the Surgeon General with request for permission to publish same. Upon approval, a copy will be forwarded to the journal designated by the officer for publication.

(*Memo. to division surgeons, Surgeon General's Office, March 27, 1918.*)

Method of Procedure in Handling Manuscripts by the Board of Publications.

The following method of procedure which will govern the handling of manuscripts by the medical publications board is published for the information and guidance of all concerned:

1. Manuscripts of medical papers forwarded for approval should first be sent to Maj. F. H. Garrison, room H-246, for entry. They will then be sent to specialists for examination and approval, and returned to room H-246 for return to the author or transmission to a medical journal. In either case, the author should be notified of the final disposition by a card. Duplicate copies of all papers sent in should be required.

2. Examination of papers by specialists will include a critical revision of the text for printing. and a close examination of the article for passages which should be deleted, viz, communication of facts of value to the enemy, erroneous or inaccurate statements, grammatical and typographical errors, errors in taste and judgment, florid self-praise, infractions of paragraph 5, A. R., abusive statements, or any other sins of omission or commission which might reflect upon the Medical Corps or the Medical Reserve Corps.

3. Approval or disapproval of publication will be indicated impersonally by a stamp reading "Publication (approved, disapproved) by board of publications," countersigned by the secretary. Return of a manuscript so stamped will take the place of a letter. The memoranda of those passing on the manuscript will be filed in the record room, and the history of the transaction will be recorded on a card index in room H–246. Anything requiring deliberation, or otherwise of moment, should be discussed by the entire board and the findings signed by the chairman.

(*Office Memo. No. 7, Surgeon General's Office, May 17, 1918.*)

Memorandum for Editors of Medical Publications.

Attention is directed to the fact that on March 27, 1918, your cooperation was solicited in a memorandum explaining the necessity for medical officers conforming with the regulation of securing authority from this office before publishing professional papers.

Further attention is now called to that portion of the memorandum for division surgeons which makes it necessary to submit professional papers to this office in duplicate. Will you kindly aid this office by submitting two copies in every instance?

(*Memo. from the Surgeon General, May 22, 1918.*)

Instructions to Medical Officers Regarding Authority to Publish.

Attention is called to the memorandum quoted below, which was issued March 27, 1918. In many instances paragraph 3 has been overlooked. It is essential that this office receive in duplicate all professional papers submitted for authority to publish:

> 1. Attention of medical officers is directed to the provisions of paragraph 423, M. M. D. Medical officers will not publish professional papers requiring reference to official records or to experience gained in the discharge of their duties without the previous authority of the Surgeon General.
>
> 2. Numerous scientific papers written by officers of the Medical Department have recently appeared in the medical press without specific authority from this office. This practice will be discontinued and the above regulations will be strictly complied with.
>
> 3. Officers desiring the publication of professional papers will submit two copies to the Surgeon General with request for permission to publish same. Upon approval, a copy will be forwarded to the journal designated by the officer for publication.

(*Memo. for all medical officers, Surgeon General's Office, May 22, 1918.*)

Publication of Clinical Records.

1. Officers connected with Army hospitals will desire from time to time to publish records of interesting cases and requests will doubtless be received from various publishers, the medical journals, and clinics for reports on interesting cases.

2. Clinical and surgical records of Army histories may be used for scientific purposes and interim publications, provided that no information be conveyed as to the identity of the patient or patients which might otherwise contravene the intent of paragraph 824, A. R., as follows:

> No information will be furnished by any person in the military service which can be made the basis of a claim against the Government, etc.

3. It is directed that any clinical or surgical case histories extracted from the records of Army hospitals for publication be cast in impersonal scientific form, that the names or the initials of the patients be omitted, and that a series of patients be indicated successively, as, A, B, C, D, to Z, etc.; *a*, *b*, *c*, *d*, to *z*, etc., corresponding with the serial numbers of the cases utilized in the article, i. e., 1, 2, 3, 4, etc.

4. In collecting such material it is directed that all articles must first be sent to the Board of Publications, Surgeon General's Office, Washington, D. C., to be passed upon by this board. Articles must be submitted in duplicate.

(*Cir. Letter to commanding officers of all base, general, and U. S. Army hospitals and surgeons, ports of embarkation, Surgeon General's Office, July 26, 1918.*)

Section of General Publicity, S. G. O.; Its Functions and Relations to the Physical Reconstruction of Disabled Soldiers.

1. There is a Section of General Publicity in this office. A commissioned officer is the director and is assisted by an administrative corps of commissioned and noncommissioned officers.

2. A commissioned officer of the Division of General Publicity has been assigned to the Division of Physical Reconstruction to aid in a cooperative effort to secure wider publicity concerning the treatment, training, education, and the general welfare of the sick and wounded soldiers in military hospitals.

3. The general aims and purposes of the Division of General Publicity are:

(A) To coordinate and standardize, as far as feasible, existing hospital newspapers and further to establish other hospital newspapers wherever the morale and the educational needs of the hospital demand them. In this connection it should be stated that, where feasible, each hospital issuing a newspaper should have all of the facilities for the publication of the paper at the hospital.

(B) To assist the educational department of the hospital and other responsible officers in the publication of the paper; by helpful suggestions; by supplying news from this office which relates to the Medical Department; by furnishing photographs, cartoons, and other original illustrations or cuts, plates, or matrices; and by aiding in increasing the advertising patronage and the circulation of the newspaper in the hospital and to the public at large.

(C) To cooperate with the Division of Physical Reconstruction by furnishing to the educational department of the hospital the services of expert newspaper men and printers as instructors of the patients who may be benefited mentally or manually by the training and education embraced in any branch of printing and the mechanical operations of newspaper work, as well as in reporting, advertising, circulating, editorial writing, illustrating, cartooning, and story writing.

(D) To furnish the daily press and the popular and scientific periodicals news items, photographs, and special articles descriptive of the curative work applied in the treatment of disabled soldiers, in the attempt to keep the public informed as to what is being done for the improvement and the cure of disabled soldiers in military hospitals, and other information from the Medical Department of general public interest.

4. It is the policy of the Division of General Publicity to serve the hospital and camp authorities in an advisory capacity. The desire is to encourage local enterprises by every possible assistance it can render. It will endeavor to place at the disposal of the local authorities the services and the advice of a body of experts in the news gathering, the making, the publication, and the circulation of an effective newspaper.

5. In order that the fullest cooperation in publicity may be obtained, you are directed to instruct the chief educational officer to send to the Division of Physical Reconstruction of this office such clippings, items, photographs, publications, posters, and special notices as will give a comprehensive idea of the work of physical reconstruction in your hospital. It is also desirable that reports should be made concerning new types of work, including successful experiments or undertakings. Striking results with individual patients and other interesting matter that will help the public to form a just estimate of the value of training, education, and play as curative measures should be reported.

6. For the information of the patients, their relatives, and friends, the hospital newspaper should contain some authoritative statements furnished by the Bureau of War Risk Insurance and by the Federal Board of Vocational Education which embrace the benefits provided by the Government for compensable disabled soldiers and sailors after their discharge from the Army and Navy. (*Cir. Letter No. 66, Surgeon General's Office, February 1, 1919.*)

General Publicity Section, Surgeon General's Office.

1. Attention is invited to the memorandum quoted below from the Section of General Publicity of this office. It is requested that information suitable for publication in the *Come Back* and other papers be furnished Capt. W. W. Smith, Sanitary Corps, U. S. Army, as requested:

> (1) There are many matters in the Surgeon General's Office which are not brought to the attention of the Section of General Publicity in time to be effectually handled with the daily press. For instance, there was a conference of Army nurses several weeks ago, and we learned of it only through a small item in a hospital newspaper that the head nurse had gone to Washington to attend said conference. This information was received too late to do anything with it.
>
> (2) It is believed that if the attention of the heads of various divisions and sections should be called to the fact that the Surgeon General's Office had a Section of General Publicity to which should be reported any news item of general public interest, for distribution to the press, it would assist in this work, for it is doubtful if many in the office know of our activities.

(*Memo., Surgeon General's Office, February 7, 1919.*)

Professional Photographers at Hospitals.

1. It is noted that many professional photographers are taking pictures at the various hospitals which pictures are later offered for sale to the newspapers and to the public generally.

2. There is no disposition to interfere with their work as long as it is done with the consent of the commanding officer of the hospital, but as these photographs have a distinct historical interest, it is believed that in return for permission to take the pictures, the photographer should agree to send one copy of each photograph to the Section of General Publicity, Surgeon General's Office, Washington, D. C., with permission to use the same in one or more of the hospital newspapers published under the direction of the Surgeon General's office.

3. Commanding officers of hospitals will take the necessary steps to carry out the above.

(*Cir. Letter No. 129, Surgeon General's Office, March 7, 1919.*)

Press Clipping and Digesting Service, General Publicity Section, Surgeon General's Office.

A press clipping and digesting service has been established in connection with the Section of General Publicity, S. G. O. It is intended this service should supply to heads of divisions and others in the Surgeon General's Office material found in the daily, weekly, and monthly press.

If you will indicate what class of clippings you desire, and whether or not you wish clippings of general interest in addition to those bearing on the work of your division, every effort will be made to comply with your wishes.

The Section of General Publicity is located in wing 2, floor 2, Capt. William Wolff Smith in charge.

(*Memo., Surgeon General's Office, March 13, 1919.*)

Cooperation of Medical Department with War Department News Bureau.

1. The following letter has been received from the director, War Department News Bureau:

WAR DEPARTMENT,
Washington, July 9, 1919.

Maj. Gen. MERRITTE W. IRELAND, U. S. Army,
Surgeon General, Seventh and B Streets, Washington, D. C.

DEAR SIR: In an effort to keep in closer touch with the news concerning War Department activities, may I ask your cooperation?

The channels established by the Secretary during the war for the dissemination of War Department news to the press are still operating through this bureau. Matter received from the different War Department branches is edited, mimeographed, and made available for the wire services, local news bureaus, and out-of-town correspondents.

The present size of this bureau prevents the sending of a representative to collect the news unless it is of immediate importance.

By authority of the Secretary of War it is requested that you forward to this office, expedited by messenger service when possible, any items of news, weekly records of activities, summaries, statistical reports, or other matter which indicates the business transacted by your bureau, department, branch, etc.

Yours, very truly,

(Signed) EDWIN NEWDICK,
Director War Department News Bureau.

2. Maj. William Wolff Smith is designated to receive and transmit all news items, etc., to the director, War Department News Bureau. Matter for publication should be sent to Major Smith by chiefs of divisions.

(*Memo., Surgeon General's Office, July 15, 1919.*)

Distribution of the Magazine *Carry On.*

1. The plan of sending an individual copy of *Carry On* magazine to each medical officer has been discontinued.

2. Hereafter a sufficient number of copies will be sent to the commanding officer of each hospital for distribution to the officers and patients.

It is requested that some efficient plan be adopted whereby every officer secures a copy of this magazine and whereby the wards are furnished with a sufficient number of copies so that all the nurses and patients will have an opportunity of reading it. Furthermore, the officers should be urged to pass the magazine on to some one else after they have finished with it.

(*Cir. Letter No. 60, Surgeon General's Office, January 29, 1919.*)

HISTORY OF THE MEDICAL DEPARTMENT IN THE WORLD WAR.

Board for Collecting and Preparing Material for Medical History of the War.

A board, to consist of Col. Champe C. McCulloch, jr., Medical Corps, and Maj. Fielding H. Garrison, Medical Reserve Corps, is appointed to meet in this city for the purpose of collecting and preparing material for a medical and surgical history of American participation in the present European war. The officers named will perform this duty in addition to their other duties.

(*Special Orders, No. 196, paragraph 217, W. D., August 23, 1918.*)

Capt. John S. Fulton, Medical Reserve Corps, is designated an additional member of the board appointed by paragraph 217, Special Orders, No. 196, August 23, 1918.

(*Special Orders, No. 196, paragraph 218, W. D., August 23, 1918.*)

Material for History.

By special order A. G. No. 196 (August 23, 1917) a board, consisting of Col. Champe C. McCullough, jr., Medical Corps, U. S. Army (executive); Maj. Fielding H. Garrison, Medical Reserve Corps (redaction); and Maj. John S. Fulton, Medical Reserve Corps (statistics), has been appointed to collect and prepare material for a medical and surgical history of American participation in the European war. To this end it is urged that medical officers in the field keep notebooks of important data bearing upon this matter, whether at the front, in base hospitals, or elsewhere; and if they have charge of medical and surgical records (Form 55), to see that these records are as accurate and complete as possible. As with the Medical and Surgical History of the Civil War, this work will be democratic rather than bureaucratic in character. All individual reports of medical and surgical cases will be duly credited to their authors. In order to anticipate or obviate the necessity of condensation and editing of manuscripts, clearness of statement and brevity of expression are essential. Long and difficult reports will be hard to handle and can not be printed in full. Every precaution will be taken against loss, and the first and best of all precautions is to retain a duplicate copy or copies. Statistical summaries made on the spot take little space and will be very valuable. Numbers are shorthand for history. Operating surgeons, in particular, will be able to furnish important material. The surgical activities of this conflict are being concentrated more definitely at the front than in any previous war. This means better surgery at the immediate front, where the facilities for keeping records may necessarily be meager. Short notes, even if written on identification tags, will possess a value not measurable by the officer making them. Degree and duration of shock; the type of wound excision practiced; the various methods of combating sepsis; striking symptoms associated with wounds of the abdomen, chest, or central nervous system; a purely personal note of general conditions under which operative work is done—all or any of these will lend a distinctive historical value to the surgical reports. In records of medical cases any special features of pulmonary, cardiac, gastric-intestinal, hepatic, and renal diseases; in neurology and data of the semeiology of lesions of the central nervous system and the peripheral nerves; in sanitation, the methods employed in preventing infectious diseases at the front, will make material of great value. Any historical material which can safely be sent overseas should be addressed to Maj. F. H. Garrison, Medical Reserve Corps, Surgeon General's Office, War Department, Washington, D. C.; and statistical materials to Capt. John S. Fulton, Medical Reserve Corps (same address).

(*Cir. Memo., Surgeon General's Office. Undated.*)

Medical War Diaries.

1. Beginning with July 1, 1918, and in connection with medical histories of camps, depot brigades, and base hospitals recently filed in the Surgeon General's Office, it is directed that medical war diaries be kept henceforth in these stations until the close of the war. These diaries shall be regarded as the literary property of the Division of Medical and Surgical History of the War, Surgeon General's Office, and must be entirely disassociated from the ordinary military and medical records of camps and base hospitals.

2. Attention is called to the fact that these records are to be regarded as stationary; i. e., the medical records of the division surgeon of a mobilized division must not be confused with the permanent medical history records of the camp or other stations in which the division has temporarily been quartered or through which it passes. The latter records must remain in the station until the end of the war as the ultimate property of the Surgeon General's Office and should not be removed by any outgoing division surgeon.

3. It is requested, however, that each outgoing camp or division surgeon transmit to this office (Division of Medical and Surgical History) a carbon of his own individual contribution to the war medical diary up to the time of his departure from the station.

4. Medical war diaries of camps and base hospitals shall be made up of brief but circumstantial entries of any events in the history of these stations which have influenced their sanitary status; e. g., outbreaks of epidemic diseases of major or minor importance, fires, or other accidents, important changes in personnel, medical administration, sanitation, new therapeutic measures and sanitary devices introduced, new construction whether by enlargement of existing buildings or erection of new buildings, incidence of unusual diseases or complications of disease, unusual surgical cases and operations performed, or any other feature of like interest.

(*Cir. Memo., Surgeon General's Office, June 24, 1918.*)

Preparation of Clinical Material for the Medical History of the War.

1. In order that the clinical material in the United States Army hospitals be prepared for insertion in the Medical History of the War before these records pass into the hands of The Adjutant General, commanding officers of these hospitals will direct the chiefs of the medical, surgical, and laboratory services to have this material prepared, either for interim publication in current medical periodicals or as manuscript for insertion in the Medical History of the War, using the subject indices of clinical records recommended by the Hospital Division on July 10. This material should include all individual cases of unusual interest or value and such studies of large groups of infectious or other diseases as may be deemed worthy of record and preservation by the chiefs of service. The extent of this material in each case may be ascertained from the subject, indices of cases, and it relative value estimated by those controlling it.

2. These instructions apply equally to the preparation of the material of the various specialties in the medical and surgical services.

3. Such material should be prepared and completed, as far as possible, by the end of the fiscal year (June 30, 1919) and sent to the Surgeon General, United States Army, attention Section of Medical History of the War, Washington, D. C.

(*Cir. Letter No. 11, Surgeon General's Office, January 6, 1919.*)

Requests for Abstracts of Empyema Cases.

1. It is desired to obtain accurate data concerning cases of empyema in the Army which can serve as a basis for a statistical study of this disease for immediate use and for the history of the war. To facilitate this collection of data, blanks are herewith sent, designed for use in preparing abstracts of the clinical course of these cases. These blanks should be invariably used. There will, however, be some cases for which they will prove inadequate. In such cases it will promote the work of compilation if the blanks are used as far as possible, with supplementary sheets attached to them.

2. It is requested that the commanding officers of base and general hospitals assign a competent person to fill out these blanks as speedily as is compatible with accuracy. Completed blanks will be promptly sent to the Surgeon General, attention Laboratory Division.

3. In many hospitals the postoperative treatment of empyemata has not been continuously the same, yet many cases have throughout a certain period received substantially identical treatment. As the space allotted to postoperative treatment in the blanks will not permit of extended descriptions, it is requested that these descriptions be furnished separately, but that it be made clear on the blank during what period such method was employed in this particular case.

4. All cases in which empyema has been diagnosticated since May 1, 1917, should be included in these abstracts, whether completed or still in hospital.

5. To assist in securing the desired uniformity in the returns, the following explanatory memoranda are furnished to amplify the necessarily concise headings on the blanks:

1. *Serial number.*—If this is not on record, scratch "Serial" and give the register number.

2. *Diagnosis on admission.*—If this was pneumonia, so state with location and variety on line below. Note on back of sheet record descriptive of condition of patient, e. g., cyanotic, marked dyspnea, condition severely septic, delirious, etc.

3. *Empyema (pleurisy).*—Give date when fluid was detected in chest, irrespective of its character.

4. *Postoperative treatment.*—See paragraph 3, above.

5. *Secondary operations* refer only to those on the chest.

6. *Thoracic wound closed.*—Give recorded date when wound or wounds made for the treatment of the empyema were completely healed.

7. *Disposition of patient.*—If in hospital, give number of ward.

8. *Laboratory reports.*—Include blood counts, white and red; determinations of hemoglobin, bacteriological examinations of blood, sputum, and fluids from the pleura or elsewhere.

9. *Memoranda of subsequent temperature.*—The desired information in many cases could be given as follows: "From (date)........ to (date)........ daily temperature rose above 100°, with maximum to ...... and minimum of ...... for this period."

EMPYEMA CASE ABSTRACT.

[For the Surgeon General of the Army, attention Laboratory Division.]

.... hospital, at ...., ..., 1919.

Name of patient .... Serial No...............

Home address .... Admitted................, 191......

Diagnosis on admission .... following ....

Pneumonia: Date .... Location .... Variety......................

Empyema (pleurisy): Date................. Location...

Pneumothorax before operation: Date.................... Location..............................

Thorax aspirated (give dates, character of fluid, amount withdrawn):..........................

....

....

First operation: Date................. Site..

Nature of operation:...

Fluid evacuated: Character...................... Amount..................................

Postoperative treatment..

....

....

Secondary operations (give dates and nature of operations):...............................

....

....

Complications (give dates, nature of complication, treatment):...............................

....

....

Pleuro-bronchial communication: Date................. Treatment..............................

Thoracic wound closed................. 191......

Disposition of patient.., ...191......

(In case of death, give autopsy findings on back of sheet, noting particularly any record of pulmonary abscesses.)

X-ray plates: Dates..

Laboratory reports (blood, sputum, pleural, and other exudates, with dates):...................

....

....

	Temperature.	Pulse.	Respiration.
Daily maximum and minimum first five days in hospital from............191.. to ....191.., inclusive............	....	....	....
Day before first operation..................	....	....	....
Day of first operation..................	....	....	....
Day after first operation..................	....	....	....
First normal temperature............191..................	....	....	....

Memoranda of subsequent rises of temperature above 100°, with dates:

....

....

(Use back of sheet if above spaces are inadequate, and for special notes.)

(*Cir. Letter No. 23, Surgeon General's Office, January 10, 1919.*)

Clinical Material for Medical History of the War.

1. In connection with Circular Letter No. 11, Circular Letter No. 19 is hereby rescinded and the following substituted:

2. In order to relieve the hospitals from burdensome paper work the information asked for in Circular Letter No. 19, as far as possible, will be compiled in this office; however, much data that should go into the History of the War are not available in this office and must be prepared in the different hospitals.

3. Of particular importance are:

(*a*) Individual cases of great clinical or pathological interest or rarity.

(*b*) Group studies in which a particular method of diagnosis or of treatment has been successful.

(*c*) New apparatus, splints, etc., devised by a member of the staff, or a modification of the method of using old apparatus, splints, etc.

(*d*) A brief but complete description of the technique employed in preoperative and postoperative preparation.

(*e*) Points in operation technique peculiar to the hospital.

(*f*) A discussion of the experience of the hospital in anesthesia, general, local, or spinal (safety of cocaine and novocaine).

4. This information should date from the opening of the hospital. The date of final compilation should be stated. In reporting groups of cases, total number and not percentages must always be stated.

5. This material should be prepared and completed as soon as possible, and sent to the Surgeon General, attention Section of Medical History of the War, Washington, D. C.

6. Correspondence is solicited by this office if the commanding officer and chief of surgical service desire further information.

(*Cir. Letter No. 32, Surgeon General's Office, January 16, 1919.*)

Report on Examinations for Hookworm and Other Intestinal Parasites.

1. For use in the Medical History of the War, a report of all hookworm surveys made during the war will be prepared and forwarded to the Office of the Surgeon General, attention Laboratory Division, together with the original documents, suitably arranged and listed.

2. This report will be made up on the accompanying blanks in two parts:

(*a*) Statistical report by organizations (regiments, detachment units, increments, or their subdivisions in depot brigades). In the case of routine examinations of patients at hospitals, the totals only will be given.

(*b*) Statistical report by geographical distribution of all men examined by States, and, whenever available, by counties in the States within the hookworm area.

Additional blanks will be furnished on request.

3. The methods used in the survey should be given.

4. In addition to these reports, any available special information pertaining to parasitic infections of troops by hookworm and other intestinal worms and by parasitic protozoa should be sent in for inclusion in the history. These special reports will include such matters as reports on results of examinations after treatment; studies and maps of distribution of infections, observations on effects of treatment on health of troops, examination of feces after treatment for worms, tests of methods, relation of hookworm infections to other diseases, etc. Suitable credit will be given for these reports if published.

STATISTICAL SUMMARY OF HOOKWORM SURVEY AT ——————.
From —————, 19—, to —————, 19—.

Under direction of ————————————————————

Report prepared by ————————————————————

Organization.	Total of roster.	Number of examinations.	Negative.	Infections by—							
				Hookworm.		Hymenolepis nana.	Trichuris trichiura.	Tenia saginata.	Tenia solium.	Ascaris.	Miscellaneous.
				Number.	Per cent.						
....	......	......	......	......	......	......	......	......	......	......	......
....	......	......	......	......	......	......	......	......	......	......	......
....	......	......	......	......	......	......	......	......	......	......	......
Total....................	......	......	......	......	......	......	......	......	......	......	......

STATISTICAL SUMMARY OF GEOGRAPHICAL DISTRIBUTION OF HOOKWORM INFECTIONS IN TROOPS OF UNITED STATES ARMY AT ——————.

From ————, 19—, to ————, 19—.

Under direction of ————————————————

Report prepared by ————————————————

State.	County.	Total number examined.	Negative for hookworm.	Positive for hookworm.	Per cent of infection.
....	....	....	....	....	....
....	....	....	....	....	....
....	....	....	....	....	....
....	....	....	....	....	....
Total........	....	....	....	....	....

(*Cir. Letter No. 62, Surgeon General's Office, February 1, 1919.*)

History of Dental Service.

1. A history of the dental service at each base hospital, general hospital, camp, post, or other station will be submitted by the dental officer in charge to the Surgeon General not later than March 30, 1919.

2. This history should not be limited to the time the present dental officer has been on duty at the station, but will include the period from the beginning of the war. It is important that a thorough and complete report be made, as it will go on record as the official history of the dental service at the station.

(*Cir. Letter No. 106, Surgeon General's Office, February 25, 1919.*)

Information for Historical Purposes.

1. It it directed that you inform the Chief of the Section of Otolaryngology that no reply has been received to a circular letter mailed from this office November 13, 1918, which requested—

(*a*) A short history from the standpoint of otolaryngology of the epidemic of influenza.

(*b*) A short history of the section of otolaryngology at your hospital.

(*c*) A photograph of the head building, of the otolaryngological clinic room, and named pictures of the otolaryngological staff past and present as far as they can be easily obtained.

2. It is especially desirable that this information be furnished while there are still medical officers in the service who can give the required data.

3. It is especially desired that a full list of the otolaryngologists who have served at your hospital, in the order of their service, with the date of appointment, transfer, or discharge, be given.

(*Cir. Letter No. 103, Surgeon General's Office, February 25, 1919.*)

Material for the Prospective Medical History of the War.

1. Information has reached this office that in some instances medical officers, upon leaving the service, are taking with them official charts, photographs, models, and pathological specimens, etc., which were prepared in connection with their official duties while on duty in various hospitals or camps.

2. It is desired that responsible medical officers inform all subordinate medical officers that all medical records, charts, drawings, models, and pathological specimens, etc., as well as all writings relating to cases in hospitals, are the property of the Medical Department of the United States Army, and must not be moved from camps or hospital by any officer without the authority of the Surgeon General of the Army in each specific case.

3. It is desired that every effort be made to collect and forward to the Surgeon General's Office all photographs, drawings, sketches, models, and pathological specimens, etc., in hospitals or camps which may be of use or value in the prospective Medical History of the War. All pictures should be forwarded to Col. Louis C. Duncan, Medical Corps, Army Medical Museum, Washington, D. C. Models and pathological specimens should be forwarded to Col. Charles F. Craig, Medical Corps, Curator, Army Medical Museum, Washington, D. C.

(*Cir. Letter No. 109, Surgeon General's Office, February 26, 1919.*)

Material for the Army Medical Museum and the Prospective Medical History of the War.

1. It is understood that there is a large amount of material being accumulated at various hospitals in the way of pathological specimens, autopsy records, charts, drawings, paintings, and models which are being used for instruction purposes but of which there is no record in this office. While there is no objection to this material being retained at hospitals for instruction purposes for a reasonable length of time, it is necessary that the Government have a record of it in order that it can be located and made available when needed.

2. Commanding officers of hospitals are directed to have a catalogue of all such material prepared, including photographs, drawings, sketches, paintings, models, etc., of cases now in hospital or that have been in hospital, and that such catalogue be forwarded to the curator, Army Medical Museum. If it is desired that any or all of this material be retained at the hospital, it will be so stated in the letter of transmittal accompanying the catalogue. In such case a requisition for the material will not be made without corresponding with the responsible officer or unless it is urgently needed at the Army Medical Museum or for the medical history of the war.

3. Attention of all medical officers is invited to the provision of Circular Letter No. 109, Office of the Surgeon General, February 28, 1919, especially to paragraphs 2 and 3.

(*Cir. Letter No. 247, Surgeon General's Office, June 28, 1919.*)

War Diaries.

1. Your attention is directed to the inclosed memorandum, issued by the Surgeon General under date of June 24, 1918, relative to war diaries.

2. These diaries will hereafter be submitted quarterly in accordance with the provisions of the memorandum referred to, and will be sent to the Surgeon General, attention Division of Medical and Surgical History.

(*Cir. Letter from the Surgeon General, September 13, 1919.*)

Historical Division, Surgeon General's Office.

1. A division, designated the Historical Division, is hereby created in this office. All matters pertaining to the medical and surgical history of the World War will be handled in this division.

2. Col. Charles Lynch, Medical Corps, is designated as chief of the division.

3. The following personnel will report to the Chief of the Historical Division for duty:

Col. Louis C. Duncan, M. C.
Col. Raymond C. Turck, M. C.
Capt. Frank Steiner, S. C.
Contract Surg. Casey A. Wood.
Contract Surg. Loy McAfee.

(*O. O. No. 1151, Surgeon General's Office, December 4, 1919.*)

HOSPITAL TRAINS.

Delays in Movements of Hospital Trains.

1. Hospital trains operating from the ports of debarkation are being subjected to delays because hospitals of the interior refuse to unload the patients immediately upon arrival. The patients are frequently kept aboard and the trains delayed until the following morning. Delays are also occasioned by the unwillingness on the part of hospital authorities to receipt for patients until they have been formally entered and recorded in the hospital. Such practices deprive the ports of the use of the hospital trains and their personnel. Moreover, railroad schedules are upset and other movements very much embarrassed.

2. Hospital trains and trains for patients will be unloaded immediately upon arrival at their destination. Receipts for patients will be promptly executed and every effort will be made to expedite the return of the trains with their personnel.

(*Cir. Letter No. 55, Surgeon General's Office, January 28, 1919.*)

Commutation of Rations on Hospital Trains.

The following is an advance copy of paragraph 1229½, Army Regulations, as amended:

ARMY REGULATIONS.

CHANGES No. —.

WAR DEPARTMENT,
Washington, March —, 1919.

Paragraph 1229½, Army Regulations, is changed as follows:

1229½. (Added by C. A. R. No. 82, W. D., 1918.) Add the following:

When sick or wounded enlisted men are transferred as patients to general or special hospitals on hospital trains, or on ordianry trains which are conducted as hospital trains, and are subsisted from the hospital kitchen or dining car provided for that purpose by the War Department, commutation of rations at the rate of $1 per day will be allowed and will be paid in advance of the journey to the officer in charge of the hospital trains, whose duty it will be to see that the patients are properly fed and that the funds are judiciously expended. This commutation rate will also govern in the case of attendants and nurses accompanying patients on these hospital trains. (C. A. R. No. —, March —, 1919.)

[246.84, A. G. O.]

By order of the Secretary of War:

FRANK MCINTYRE,
Major General, Acting Chief of Staff.

Official:
P. C. HARRIS,
The Adjutant General.

(*Memo. Surgeon General's Office, March 22, 1919.*)

MEDICAL RECORDS.

Sick and Wounded Reports.

1. The Sick and Wounded Division of the Surgeon General's Office requests that the following information be furnished commanding officers of hospitals:

It is noted that some of the reports are shipped by express and some are broken up into various packages and shipped by mail. The supply division has given authority to ship all reports which are too large to be sent in one package by mail, by express, the shipment to be made upon War Department B/L and the account to be paid here by the Medical Supply. It is very desirable that the reports should be shipped in one package and not broken up.

(*Cir. Letter, Surgeon General's Office, February 9, 1918.*)

Shipment of Sick and Wounded Cards.

1. The Surgeon General directs that you be informed that in many instances the sick and wounded cards forwarded to the Surgeon General's Office arrive in poor condition and that the container or package is frequently broken.

2. You are directed to use due care in the packing of these cards in proper containers, and if the package is of such size and weight that it will not go through the mail in good condition, the cards should be packed in a suitable box and shipped by express on Government bill of lading.

(*Cir. Letter, Surgeon General's Office, March 23, 1918.*)

Preparation of Sick and Wounded Reports.

1. Attention is invited to the attached copy of instructions as sent out from this office on July 26, 1917.

2. Paragraphs 3 and 4 of these instructions are further amended to require one consolidated "Numerical report for the month" on Form 51, with a consolidated strength for the Regulars, National Army, and National Guard, and a statement of the movement of the troops composing the command. A statement should be made on Form 51 showing to what branch—that is, Regulars, National Army, and National Guard—the major portion of the command belongs.

(*Cir. Letter, Surgeon General's Office, April 30, 1918.*)

Medical Records.

1. From an examination of the sick and wounded cards received here it is apparent that there is a lack of proper coordination between the medical records of the various infirmaries and the base hospitals in divisional camps.

2. It very frequently happens that the regimental infirmary will show a man discharged for a disability upon a date while the man is a patient in a base hospital. The base hospital subsequently shows the same man discharged from the service upon a different date, returned to duty,

or, as in one case brought to my attention to-day, dying. This confusion has no doubt resulted in cases being acted upon by boards at the camps who recommend discharge either before the patient's admission to the base hospital or afterwards. Then, when the order for discharge upon certificate of disability is received the proper notification is either not received by the base hospital or by the infirmary.

3. It is recommended that medical officers of organizations be directed to promptly notify the base hospital in all cases where a member of a command is discharged upon certificate of disability from the service, while a patient in the base hospital. The base hospital should then drop the case and subsequently continue the case in the hospital upon the status of a civilian if further medical treatment is necessary.

(*Letter to commanding officers of all base hospitals and camp surgeons, Surgeon General's Office, July 12, 1918.*)

Disposition of Medical Records for Cases Invalided to United States from Europe.

1. Attention is invited to the attached copy of letter from The Adjutant General's Office of May 27, 1918. This letter was proposed in this office. The purpose was to simplify the paper work connected with the distribution of patients invalided to the United States from Europe and at the same time to furnish this office with prompt information of the names of the men invalided to the United States, with the cause in each individual case.

2. The instructions (see par. 4) are that the transfer cards or the individual field medical cards accompanying the patients are to be mailed direct to the Medical Record Section, Surgeon General's Office, as soon as practicable upon the receipt of the patients at the designated hospital. These should not be held and forwarded with the monthly report, but should be forwarded from time to time with as little delay as practicable.

May 27, 1918.

From: The Adjutant General of the Army.

To: Commanding generals of ports of embarkation and division camps and commanding officers of general and independent base hospitals.

Subject: Disposition of medical records for cases invalided to the United States from Europe.

1. The American Expeditionary Force has adopted the British field card, which is a folded card in a waterproof envelope. This card in its envelope is attached to the patient's clothing and follows him from the first hospital to its final disposition in the United States provided he is invalided to the United States. The patient's name, rank, and organization is written with pencil upon the outside of the waterproof envelope. Notations are made upon this card at each hospital where the patient is treated. It gives in brief the diagnosis and medical history of the case with the principal points in the treatment. Until the use of the cards is inaugurated, it is presumed that the ordinary transfer card will be used, Form 52, M. D.

2. In either case the commanding officers or their designated assistants at the clearing hospitals for the ports of debarkation will stamp or write upon the transfer card or upon the field card accompanying the man the name of the hospital, the date of admission, and the date of disposition. It will not be necessary to take the patient up as a formal patient in the hospital unless something of sufficient importance occurs while there to make such a course advisable.

3. If patients are held in hospitals at the ports of debarkation for more than a few days and for reasons other than awaiting transfer to other hospitals, a record will be made in the case, in compliance with existing regulations.

4. After the patient arrives at the designated hospital for final treatment, as soon as the necessary data can be taken from the transfer card or field card accompanying the man, the name of the hospital and the date will be stamped or written upon the transfer card or field card, which will then be mailed direct to the Medical Record Section, Surgeon General's Office.

By order of the Secretary of War:

Roy D. Harper, *Adjutant General.*

(*Cir. Letter, Surgeon General's Office, July 29, 1918.*)

Disposition of Medical Records for Cases Invalided to United States from Europe.

1. It has become increasingly important to have records here as promptly as possible of all cases invalided home from Europe. The Medical Record Division of this office is the only office in Washington that can give accurate information relative to the character of the cases that are invalided home from Europe, with the names of the individual patients and their location.

2. A great many of these records are now received promptly. It is desirable that all of them should come in with as little delay as possible.

3. The Chief of Staff's Office is especially interested in this matter. This subject is again called to the attention of everyone concerned with directions that the instructions in the two accompanying letters be promptly complied with in every case.

(*Cir. Letter, Surgeon General's Office, September 7, 1918.*)

Signing of Sick and Wounded Reports and Initialing of Report Cards.

1. In examining reports of sick and wounded cards in the Medical Record Division of this office, it is noted that the reports and report cards are in some instances signed or initialed by Sanitary Corps officers.

2. Paragraphs 400, 435, and 460*b*, M. M. D., 1916, require that papers of a professional character should be signed or initialed by a medical officer whenever one is present with the command. The senior medical officer is responsible for the proper rendering of the report and report cards. At either base or general hospitals and at other hospitals when specially authorized by the Surgeon General the commanding officer or surgeon may designate a junior medical officer to sign reports and initial report cards.

3. These instructions have not been rescinded so far as this office is aware. There is no authority for a nonprofessional man to sign professional papers when a professional man is available to sign them. You are directed to comply with the provisions of the Manual of the Medical Department relative to the signing of reports or initialing of report cards in preparing all future reports.

(*Cir. Letter, Surgeon General's Office, September 21, 1918.*)

Notification of Discharge for Men who are Physically Disqualified for all Military Service.

A register card should be prepared and a report card forwarded for every man who is discharged or mustered out of the service who is physically disqualified for all military service, even though the physical condition of the soldier at the time of discharge or muster out is recorded upon Form 135 and is not upon certificate of disability, Form 17. See M. M. D., pars. 428*d* and 460.)

(*Cir. Letter, Surgeon General's Office, December 6, 1918.*)

Disposition of Medical Records for Cases Invalided to the United States From Europe.

1. In connection with the records of patients invalided to United States forwarded to the Medical Record Section of this office, attention is invited to paragraph 4 of a letter from the office of The Adjutant General dated May 27, 1918:

> 4. After the patient arrives at the designated hospital for final treatment, as soon as the necessary data can be taken from the transfer card or field card accompanying the man, the name of the hospital and the date will be stamped or written upon the transfer card or field card, which will then be mailed direct to the Medical Record Section, Surgeon General's Office.

2. It is noted in this office that a good many cards are now being received where the responsible medical officer at the receiving hospital fails to stamp or write on the back of the card the name of the receiving hospital and the date. It is very necessary that this information appear on the card as directed.

(*Cir. Letter No. 37, Surgeon General's Office, January 17, 1919.*)

Disposition of Field Medical Cards for Cases Invalided to the United States from Europe.

1. It has come to the attention of this office that some responsible medical officers have misinterpreted the letter of The Adjutant General's Office of May 27, 1918, subject, "Disposition of medical records for cases invalided to United States from Europe," and Circular Letter No. 37 of this office, of January 17, 1919, upon the same subject, and that at some hospitals the field medical cards are being held as part of the permanent records of the hospitals.

2. Any field medical cards that have been retained at the hospitals through a misunderstanding should be forwarded at once to the Medical Record Section, Surgeon General's Office. In the future all field medical cards received should be forwarded as promptly as practicable.

3. Clinical records received with patients from overseas should be retained as part of the permanent records of the hospital, and should not be forwarded to the Office of the Surgeon General.

4. Reports of overseas disability boards received for cases invalided home from Europe should be retained as part of the permanent medical records of the hospital unless there are no field medical cards accompanying the patient. In such cases, the reports of overseas disability boards should be forwarded in lieu of the field medical cards.

(*Cir. Letter No. 124, Surgeon General's Office, March 4, 1919.*)

Disposition of Clinical Records.

1. In connection with paragraphs 425 and 426, M. M. D., paragraph 821, A. R., and Circular 73, W. D., November 18, 1918, attention is invited to the attached correspondence between this office and The Adjutant General. In compliance with the instructions contained in the first indorsement thereon (314.3 Medical, Misc. Div.), the following procedure will be followed:

(*a*) When a general or base hospital is to be abandoned entirely, or is to be changed into a camp or a post hospital, all clinical records (Forms 55 *a* to *u*, Med. Dept.), together with the index of diseases, will be shipped to the Surgeon General of the Army, attention Reprint and Journal Section, Seventh and B Streets, NW., Washington, D. C. Similar action will be taken three months after the conclusion of peace at all base and general hospitals which at that date are still operating as such. Similar action will be taken at once at each hospital at an aviation field, or other aviation station, and at camp hospitals.

(*b*) At the time of making shipment a letter stating fact and date of shipment, number of boxes, and number of records or index cards in each box will be sent to the Surgeon General of the Army, attention Reprint and Journal Section.

(*c*) Shipment will be made by freight on Government bill of lading.

(*d*) The clinical record sheets will be neatly and carefully arranged; each complete record will be properly fastened together by clips; the records will be arranged serially by number and securely tied up in bundles of convenient size. On each bundle will be attached a paper showing the first and last numbers contained in the bundle. The bundles will be carefully packed in suitable boxes, well lined with paper. Each box, in addition to the address, will be marked so as to show its source ("General Hosp. No. 3") and its contents ("Clinical records"). The index of diseases will be handled in a similar manner.

War Department,
Office of the Surgeon General,
Washington, February 25, 1919.

From: The Surgeon General of the Army.
To: The Adjutant General of the Army.
Subject: Retention in the Office of the Surgeon General of clinical medical histories of abandoned military posts and commands.

1. The retained clinical medical records on file in the various hospitals in this country and in the American Expeditionary Forces are of great professional interest. It is consequently desirable that when these records are sent to the War Department as hospitals are discontinued that they should be filed in the Surgeon General's Office for a period of not less than five years.

2. When these records, with their indices, are turned over to this office, they can be arranged so as to be available for professional research work. On the other hand, if they are filed in the Office of The Adjutant General for pension purposes by the name of the individual only, it will be impossible to utilize the information contained in them for professional investigation.

3. It is recommended therefore, that as hospitals are discontinued in this country and in the American Expeditionary Forces the clinical medical records, with their indices, be packed separately and shipped to this office to be retained here for a period not exceeding five years.

M. W. Ireland,
Surgeon General, U. S. Army.

[1st ind.]

314.3 Medical (Misc. Div.).
War Department, A. G. O., March 7, 1919.
To the Surgeon General.

Approved as recommended herein. The Surgeon General will issue the necessary instructions to provide for these shipments from hospitals that are to be discontinued.

By order of the Secretary of War:

J. C. Ashburn, *Adjutant General.*

(*Cir. Letter No. 137, Surgeon General's Office, March 15, 1919.*)

Disposition of Clinical Records.

1. In connection with Circular Letter No. 137, dated March 15, 1919, subject, Disposition of clinical records, attention is invited to the fact that, contrary to the instructions contained therein, a great variety of records are being forwarded to the Reprint and Journal Section, Surgeon General's Office.

2. It is directed that clinical records only be forwarded to this office under the instructions above referred to and that these records be properly indexed and packed for shipment as indicated therein.

(*Cir. Letter No. 179, Surgeon General's Office, April 17, 1919.*)

MISCELLANEOUS INSTRUCTIONS.

Reporting Movement of Troops.

1. The following instructions received from The Adjutant General of the Army under date of April 29 are published for your information and guidance:

Considerable trouble having been experienced in this office due to the inaccurate and careless manner in which many movements of troops are reported, as well as the failure at times to report such movements, the Secretary of War directs that the following instructions be sent you for the information and guidance of your command.

If the report is of a confidential nature it should be sent in code or broken code. The station from which men are leaving and the destination should always be given. The organization to which men belong and to which they are to be assigned should be given if possible. In case they are only part of an organization, the designation of the unit moving should be given. The movement of troops should be reported as promptly as possible. Where an organization, or part of same, has been placed at the disposal of a specific commanding officer, the stations of component parts designated by that commanding officer should be reported. In other words, promptly furnish all available information on each change of organization of your command. It is desired that you frame your telegrams in such a manner that there will be no excuse for failure to understand. Failure to give proper information will cause equipment, officers, and men to be sent to the wrong station. The movement of troops should be reported when leaving a station as well as upon arrival at destination.

(*Cir. Letter from the Surgeon General, May 1, 1918.*)

Instructions to Commanding Officers of Troops Traveling by Train.

The following, issued by The Adjutant General of the Army under date of May 6, 1918, is furnished for your information and guidance. It is requested that all concerned be informed of these nstructions:

> You are directed to instruct commanders of all bodies of troops traveling by train that they will be held responsible for payment for supplies ordered en route, provided, of course, that such supplies are as ordered. Many cases of such orders seem to have been repudiated for some cause or other upon arrival of trains at points of delivery.

(*Cir. Letter from the Surgeon General, May 10, 1918.*)

Circular Letters Numbered Serially.

1. Beginning this date, circular letters numbered serially will be issued from this office, conveying to medical officers information or instructions of a more or less general nature. These circular letters should not be confounded with numbered *circulars, S. G. O.*, which bear the approval of the Secretary of War and are issued by The Adjutant General's Office.

2. It is not the purpose to distribute the circular letters to all officers, but only to those concerned in their subject matter. A monthly index will, however, be prepared, showing the subject matter of each circular, which will be distributed to—

Department surgeons.
Surgeons, ports of embarkation.
Camp surgeons.
Surgeons, independent posts.
Commanding officer, general, base, and port of embarkation hospitals.
Commandants, Army Medical School and medical officers' training camps.
Attending surgeon, Washington, D. C.

This will enable these officers to determine whether their files of letters intended for them are complete.

3. All communications in reply to circular letters should be addressed to "The Surgeon General, U. S. Army, attention of ———— Division, Washington, D. C.

(*Cir. Letter No. 1, Surgeon General's Office, January 2, 1919.*)

Records of Inventions and Licenses.

1. This office has received a request from the Patent Section, Office of the Director of Purchase, Storage and Traffic, for information in regard to records of inventions and licenses. In order to enable this office to furnish the information desired, you are requested to invite the attention of all medical, dental, veterinary officers, enlisted men, Medical Department, and civilian employees serving under your direction to paragraph 4, General Orders, No. 93, War Department, 1918, and direct such officers and enlisted men, and civilian employees as may come within the purview of that order, to furnish the following information to this office, attention executive officer:

(*a*) Brief titles of all inventions relating to military affairs made by them.

(*b*) Brief description of each invention, together with a statement as to whether or not it has been submitted to the War Department to be patented, and whether formal tender or licenses to the United States to use the same has been made.

2. It is requested that this matter be expedited.

(*Cir. Letter No. 59, Surgeon General's Office, January 29, 1919.*)

Channels of Communication.

1. Reports of inspectors indicate that instructions are frequently conveyed to subordinate medical officers on duty in hospitals direct from divisions of the Surgeon General's Office, instead of through the commanding officer of the hospital, as provided for in Army Regulations. Further, changes of station of commissioned personnel on duty in hospitals have, in some instances, been made on the recommendation of divisions of the Surgeon General's Office without reference to or consultation with the commanding officer of the hospital.

2. The practices indicated in the preceding paragraph are subversive of discipline and will be discontinued. Hereafter, no change of station of commissioned personnel on duty in hospitals will be requested by divisions of the Surgeon General's Office without previous consultation with the commanding officer of the hospital, and all instructions from the Surgeon General's Office intended for subordinate medical officers on duty in hospitals will be sent only through the commanding officer of the hospital concerned.

(*Cir. Letter No. 110, Surgeon General's Office, March 1, 1919.*)

Criticisms and Suggestions in re Medical Service of the Army.

1. A board of medical officers, consisting of Brig. Gen. Francis A. Winter, Brig. Gen. John M. T. Finney, and Col. L. A. Conner, has been appointed to consider criticisms and suggestions concerning the medical service of the Army.

2. With a view to correcting defects in and increasing the efficiency of the department, officers of the Medical Department, including those of the Medical, Dental, Veterinary, and Sanitary Corps, are invited to submit to the board any criticisms they may have to make of present system and methods, together with suggestions for improvements therein.

3. Communications on this subject should be sent to Brig. Gen. Francis A. Winter, Army Medical School, 462 Louisiana Avenue NW., Washington, D. C.

4. Camp surgeons, surgeons of ports of embarkation, department surgeons, commanding officers of hospitals, and other medical officers are requested to call the attention of officers to the provisions of this letter.

(*Cir. Letter No. 119, Surgeon General's Office, March 4, 1919.*)

Semiannual Report.

1. The semiannual reports called for in letter 36948–160 (S. G. O.), October 25, 1915, will be amended to conform to the attached form, "Semiannual report on venereal diseases."

SEMIANNUAL REPORT ON VENEREAL DISEASES, ... DEPARTMENT.

Organizations or posts.	Cases under treatment.	Days lost from duty.	New cases detected.	Total.	New cases of gonorrhea.	New cases of chancroid.	New cases of syphilis.	Strength of command.	New case rate per 1,000 per annum.	Prophylactic treatments administered.	Prophylactic rate per 1,000.
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....

(Sgd.) ....

Medical Corps, U. S. Army, Department Surgeon.

(*Cir. Letter No. 296, Surgeon General's Office, September 4, 1919.*)

Correspondence.

The practice of sending letters and telegrams to this office for the attention of any particular person or division in the office will be discontinued. All official communications will be directed to the Surgeon General, United States Army, Washington, D. C.

(*Cir. Letter No. 315, Surgeon General's Office, October 6, 1919.*)

Reduction of Telegraphic Communications.

1. Attention is invited to War Department Circular No. 493, quoted below for the information and guidance of all concerned:

WAR DEPARTMENT,
Washington, October 28, 1919.

CIRCULAR
No. 493.

REDUCTION OF TELEGRAPHIC COMMUNICATIONS.

1. It is necessary that the tremendous volume of communications by telegraph to and from the War Department and between the various departments, posts, camps, and stations be reduced.

2. To effect such reduction, instructions, information, or communications of the classes indicated herein, and which heretofore have been sent by telegram, will be forwarded on the new form described in paragraph 4 by special-delivery mail.

3. The classes of communications to be sent by special-delivery mail are:

(*a*) Communications whose contents are important in their nature and require prompt attention but upon which immediate action is not necessary.

(*b*) Communications from the War Department to headquarters of departments, posts, camps, or stations which require prompt attention and action and which under normal conditions should be received within 18 hours after mailing by special delivery.

(*c*) Communications to the War Department requiring prompt attention and action and which should normally reach the War Department from departments, posts, camps, or stations within the period indicated in (*b*).

(*d*) Communications between departments, posts, camps, or stations requiring prompt attention and action and which should be received within the period indicated in (*b*).

The communications referred to in this paragraph will include indorsements which come under the conditions stated.

4. There is being printed for distribution a blank form, Form 723, A. G. O., for use for communications indicated in paragraph 3. This form will be on letter-size paper, 8 by 10½ inches, containing the following heading, "Special-Delivery Letter." "This communication will receive the immediate attention given to a telegram, and prompt action will be taken when necessary," and will have a ¼-inch border. The printing and border will be red. The office heading of the sending office may be printed, but if not printed will be typewritten, as on other communications. The form will be used for the first page only of a communication, which, because of its extent, covers more than one page, the ordinary letter paper to be used for additional pages. The form will not be used for carbon copies. When the form is not available it may be improvised by typewriting with red copy ribbon or by writing in red ink on the ordinary letter paper the words "Special-Delivery Letter." When forwarded a special-delivery postage stamp will be placed on the envelope containing the communication.

5. When a communication is received on the form it will be considered as a telegram with reference to the action to be taken, and when the communication so indicates action will be expedited.

6. To prevent the indiscriminate use of the form, thereby nullifying the purpose for which it is designed, great care will be taken that it is used only for such instructions, information, or other communications as require special attention or expedited action, and under former conditions by telegraph. The form will not be used by individuals merely for the purpose of expediting action on communications which relate solely to themselves, except in cases under paragraph 3.

7. Telegrams will be used as heretofore when urgency of the matter forwarded is such that use of the new form will unduly delay important instructions or information.

[311 A. G. O.]

(*Cir. Letter No. 341, Surgeon General's Office, November 5, 1919.*)

Distribution of War Department Circulars.

1. Hereafter the distribution of mimeographed copies of War Department circulars will be limited to circulars whose instructions or information are of concern to the Medical Department. Files of War Department circulars therefore will be incomplete. To enable officers to determine whether all necessary circulars have been received, a notation will be placed at the top of each circular distributed, stating the number of the last circular forwarded.

(*Cir. Letter No. 343, Surgeon General's Office, November 7, 1919.*)

MORALE.

Appointment of Morale Officers and Conduct of Morale Work in Hospitals.

1. Your attention is invited to section 5, General Order No. 94, War Department, October 19, 1918. A conference has been held between representatives of the morale branch of the General Staff and the Surgeon General's Office and it was the consensus of opinion that a morale organization would be "particularly valuable in hospitals when conditions necessarily exist that are depressing to morale, whereby convalescence of certain patients may be interfered with and the hospital itself come under unwarranted criticism due to unwholesome state of mind of individuals and groups rather than physical deficiencies of the hospital and its service."

2. The following recommendations have been submitted to this office and it is directed that you put them into effect:

(*a*) To get in touch with the local camp morale officer.

(*b*) To appoint from the hospital staff a suitable officer to act under the commanding officer as the agent of such morale officer within the hospital, the morale work to be performed by him in addition to other duties.

(*c*) To select and maintain such number of enlisted morale operatives as may seem to be necessary to the effective conduction of morale work among both the members of the command on duty in the hospital and among the patients under treatment therein.

(*d*) To call upon the morale officer to furnish to the hospital such general facilities as are in operation in the camps for the stimulation of morale, and which may seem suitable for operation in connection with the personnel and patients of the hospital.

(*e*) To call upon the morale officer without delay for assistance in connection with any special problem of morale as it may arise affecting the personnel on duty in the hospital, the patients therein, the relatives and friends of the latter, or the outside community.

(*f*) The camp morale officer will inform the assistant designated under section (*b*) of this paragraph as to the general nature of the morale work, the principles involved, the agencies available, and the method of their operation.

3. It is requested that you acknowledge the receipt of this letter.

(*Letter to the commanding officer, all camp base hospitals* (*through camp surgeon*), *Surgeon General's Office, December 3, 1918.*)

Suggestions for Morale Work.

1. A program of activities in connection with the morale work in a certain base hospital, which has been received by the general committee on morale, S. G. O., is hereby given with the thought that you may find some helpful suggestions therein.

2. The commanding officer of this base hospital reports:

The following activities tending toward an elevation of morale of this hospital have been organized:

(*a*) A full brass band and an orchestra have been organized and equipped and are performing valuable service.

(*b*) An average of two entertainments daily are being given in the Red Cross building for the various classes of personnel.

(*c*) A graphoscope has been purchased with complete accessory equipment and free reel service arranged,

(*d*) Detachment amusement room equipped and in use, with Y. M. C. A. representative constantly in the building.

(*e*) Construction of a Y. M. C. A. building for the use of the detachment, enlisted men, has been authorized and will be shortly begun.

(*Letter to commanding officers and morale officers of all hospitals, Surgeon General's Office, December 28, 1918.*)

Newspaper Clippings.

It is desired that you direct the morale officer of your hospital to send to Capt. William Wolff Smith, recorder, general committee on morale, this office, clippings of all newspaper or magazine articles relating to your hospital, or bearing on the work of the Medical Department of the Army, which may come to your notice. While this request relates primarily to newspapers published in your locality, any other newspaper or magazine clippings of the character above described will be appreciated.

(*Cir. Letter No. 4, Surgeon General's Office, January 3, 1919.*)

Mass and Chorus Singing.

1. Reports from some of the hospitals are to the effect that community singing has been found to be an effective means of promoting contentment, recreation, and good fellowship.

2. It is suggested that this form of entertainment be systematically developed and encouraged in all the hospitals.

3. It is further suggested that choruses and quartets be organized among the nurses and detachment men as a nucleus about which general mass singing may develop.

4. In all base and general hospitals doing reconstruction work such recreational activities are under the direction of the chief educational officer. A plan for the direction and orgainzation of physical education and recreation has been worked out in cooperation with the Red Cross and a manual issued from the Division of Physical Reconstruction, this office.

(*Cir. Letter No. 54, Surgeon General's Office, January 28, 1919.*

Facilities for Work of Morale Officer.

1. The work of the morale officer conducted under the direct supervision of the morale branch of the General Staff being of much importance, it is requested that commanding officers of hospitals provide the morale officer at their hospital with an office and such facilities and assistance as the extent of the work may require.

(*Cir. Letter No. 133, Surgeon General's Office, March 10, 1919.*)

Newspaper Clippings.

1. Under Circular Letter No. 4, Surgeon General's Office, January 3, 1919, the commanding officers of all hospitals were requested to direct the morale officer of their hospital to send to Capt. William Wolff Smith, recorder, general committee on morale, clippings of all newspaper or magazine articles relating to such hospitals or bearing on the work of the Medical Department of the Army which might come to their notice.

2. As a result of this circular, a number of clippings have been received, some of which have been useful, but the number and the sources from which they have been received give the impression that comparatively few of the morale officers have had Circular No. 4 brought to their attention. It is therefore requested that this matter be brought to the attention of each morale officer, with instructions to comply with the request as far as possible.

(*Cir. Letter No. 138, Surgeon General's Office, March 17, 1919.*)

Postal Cards for Patients.

1. It is directed that you arrange to have at least one dozen artistic photographs taken of interesting views in and about your hospital, showing its main features in respect to attractiveness, equipment, facilities, personnel, etc. Some of these views should show the outside appearance and environment, interior of wards, recreation rooms, vocational shops, groups of personnel, including nurses, officers, enlisted men, and patients.

2. It is further directed that these photographs be reproduced on postal cards by photogravure in such a way as to leave space for a brief message, and that each picture postal be given a caption to show the nature of the subject reproduced, these captions to be so phrased as to give indirect suggestions of quality. Thus, "The comfortable wards of U. S. Army General Hospital No. ———," or "Patients enjoying themselves in recreation room of U. S. Army General Hospital No. ———," or "Modern equipment of operating room at U. S. Army General Hospital No. ———," or "Army nurses of General Hospital No. ——— are as good looking as they are attractive."

3. You are authorized to pay for these postals from the hospital fund, and arrangements should be made to systematically distribute at least one set gratuitously to each patient on his admission to the hospital, so that there may be no obstacle to their free and prompt use by the patients. If more than one dozen cards are desired by a patient, a further supply should be furnished him at cost, the money received from these sales to be taken up on the hospital fund.

4. It is believed that these photographic cards will not only be of interest to the patient as furnishing attractive souvenirs to send home showing his surroundings but that the suggestions of quality embodied in the captions will make him more contented with them and less liable to criticize the hospital and its administration.

5. The pictures will not only be of much personal interest to the recipients but will tend to allay any doubts as to the good care given the sender. They will tend to offset any criticism of the hospital service provided by the Medical Department.

6. It is not thought that any welfare organization should be identified with these postals. Each postal should include the words "U. S. Army General Hospital No. ———" or "U. S. Base Hospital No. ———," so that credit will be given where properly due.

(*Cir. Letter No. 155, Surgeon General's Office, March 24, 1919.*)

Morale Work.

1. The following extract from a report on the morale work being conducted at Camp Zachary Taylor, Ky., is furnished for your information:

> The experiment of utilizing the Liberty Theater for a two-night, free minstrel-vaudeville production, under the direction of the camp dramatic director, demonstrated the possibilities that may come from a soldier-talent project. Audiences of more than 1,000 soldiers and nurses were delighted by the snappy, diversified entertainment presented by the base hospital amateur actors and songsters. It is planned to use this show again next month in the Victory loan cam-

paign in Louisville. A remarkable spirit of willingness to work and an enthusiasm for volunteer entertainments are characterizing the attitude of the enlisted personnel of the base hospital. Besides the dramatic organization, the hospital morale work is materially assisted by a volunteer band, a jazz orchestra, and a nurses' chorus. The orchestra plays for parties and dances, not only at the Red Cross building and the Nurses' Recreation Home but also at the Hostess House and occasionally at the Liberty Theater. These organizations are under the direct control of the morale staff of the hospital; to them should go much credit for their helpful attitude.

Dancing classes are now held in three K. of C. buildings by the War Camp Community Service. This form of recreation has become so popular in this camp that it is difficult to meet the demands of organizations for music, chaperones, and girls for intracamp parties. The K. of C. auditorium has instituted the novelty of Saturday matinee dances for enlisted men, the first one of which was a marked success last Saturday afternoon.

A baseball club has been organized at the base hospital, and the new camp athletic director is contemplating a spring baseball tournament as soon as the weather will permit.

(*Cir. Letter No. 159, Surgeon General's Office, March 26, 1919.*)

Letter Relative to Suggestions for Improvement of Morale Work.

1. Your suggestions are desired as to any measures by which morale work among troops may be made more efficient in promoting discipline and contentment.

2. Comment is also requested as to how satisfactorily the morale organization in your hospital has served you in the above respects.

3. In this connection, attention is invited to the fact that what has been done in the brief period since the inception of this work has been subject to the difficulties of developing the necessary organization and method, and to a necessarily inexperienced personnel, combined with abrupt reversal of national military policy, the problems of demobilization, and the resulting development of unrest in civil life as well as the military service.

4. The development of the most effective organization and methods for morale work must be based on experience and the best ideas of all concerned. As commanding officer of a hospital, comment from you in such matters would be very valuable.

5. It is requested that this report be sent attention morale committee, this office.

(*Cir. Letter No. 208, Surgeon General's Office, May 14, 1919.*)

Extracts of Report on Dramatic Work by Patients in U. S. Army General Hospital No. 28, Fort Sheridan, Ill.

1. As an agency for promoting morale, entertainment by patients which induces self-activity has proven vastly more efficient than entertainment for patients in which they participate merely as passive spectators.

2. This work has been organized and successfully conducted at a number of hospitals. Inclosed is a copy of extracts from a report of the organization and operation at Fort Sheridan.

3. The report claims that patients show great interest in this form of cooperative entertainment and that it promotes an interest in the educational service and creates a wholesome social activity.

U. S. ARMY GENERAL HOSPITAL NO. 28, FORT SHERIDAN, ILL.

[Extracts from report on dramatic work among patients.]

1. *Methods used.*—A. The dramatic work is done by the patients. A play is put in rehearsal and rehearsals are held daily for two or three weeks. Several other numbers are included in the program, such as singing, dancing, monologues, etc. Sometimes outside talent is employed for one number of the program.

B. The opening program of each play will be held in the Red Cross convalescent house.

C. The program will then be taken to wards where the men can not get out—surgical wards, all wards where there are bed cases, and psychopathic wards. Portable scenery is being made for this: Light-weight screens, covered on one side with green burlap on which conventional cypress trees and clouds are painted, for the exterior set; plain tan burlap for the interior set.

D. In the spring, outdoor pageants and plays will be given. An open-air theater may be built in a ravine on the post.

E. At these programs there will be an exhibit of the handcraft done in the wards.

2. *Special problems and how they are met.*—A. The choice of suitable plays is the problem which first faces the director. These plays must be light and must appeal to the soldiers. The primary object is to gain the interest of the men and through this interest to lead them to better things.

B. The plays must be short, for many of the patients are too sick to take part in a play which would require lengthy rehearsals.

C. The men who are well enough to take part in big productions are generally ready for discharge. Therefore, the short play which can be rehearsed in a fortnight's time is the best kind for the convalescent soldier as well as for the sick one.

3. *Coordination of various departments.*—A. The commercial art department prints posters, announcing productions by the stock company and has also designed a book plate for the dramatic library.

B. The members of the curative workshop are making portable scenery for use in the wards.

C. The art students may design costumes for pageants.

(Signed) Fred P. Reagle,
Major, Sanitary Corps, Chief Educational Officer.

(*Cir. Letter No. 165, Surgeon General's Office, April 2, 1919.*)

AMERICAN RED CROSS.

Understanding Between the Surgeon General's Office and the War Council, American Red Cross.

1. The attention of all concerned is directed to the following, which has been approved by Mr. H. W. Gibson, general manager, American Red Cross, and by the Surgeon General of the Army:

MEMORANDUM OF GENERAL UNDERSTANDING BETWEEN THE SURGEON GENERAL'S OFFICE AND THE WAR COUNCIL OF THE AMERICAN RED CROSS.

1. It is essential that the procedure governing proposed donations from the Red Cross or through its agencies to the hospitals and organizations under the jurisdiction of the Surgeon General, be definite and clear.

2. Under G. O. 17, War Department, February 13, 1918, Section V, paragraph 2, it is clear that in the emergencies as they arise it is part of the duty of the commanding officer to point out the need and urge the remedy.

3. When a gift proposed is of a more permanent type, the first formal step shall be the presentation to the Surgeon General, for his judgment and approval, of a memorandum of the suggested action from the officer in charge, together with a brief statement of the need. Upon the issue of a memorandum of approval, the cooperation of the Red Cross may be invoked. It will aid in putting the special matter on the way to a speedy conclusion if a memorandum from the Red Cross be given, outlining its interest and purpose in the matter, the gift in some detail, and the station at which it is suggested the gift be used. An indorsement by the Surgeon General will then be issued authorizing the acceptance and delivery of the gift to the officer in charge at the designated station.

4. It should be made clear that the gift will then become the property of the Government, without restriction or condition in regard to its ultimate use and disposition. At the same time, it should be emphasized that in so far as possible, under conditions as they arise, the purpose of the donor will be fully recognized. Further, in so far as it is possible to lay down any rule for guidance based on mutual understanding, gifts are to be in kind and not money.

(*Cir. Letter from the Surgeon General, May 4, 1918.*)

Red Cross Activities at Base and General Hospitals.

1. The relations of the Red Cross to the Medical Department are governed by Special Regulations, No. 61, October 8, 1917, and Paragraph V, G. O. 17, W. D., February 13, 1918. Attention is called also to Paragraph III, Bulletin 50, W. D., August 31, 1918.

2. In addition to the organizational activities specified in Special Regulations, No. 61, the provisions of Paragraph V, G. O. 17, of 1918, especially sections 1, 2, and 5, should be borne in mind. It is not practicable to enumerate in detail what the Red Cross may with propriety be asked or permitted to do. The order indicates in a general way the character of the things which would be proper, and the commanding officer should in carrying out the order be guided by the principles therein implied.

3. In the matter of emergency donations by the Red Cross under G. O. 17, it is part of the duty of the commanding officer to point out the needs and urge the remedies as the emergencies arise.

4. The Government is able and ordinarily prepared to furnish all supplies necessary to meet the needs of the sick and wounded. The funds of the Red Cross are given by its members and patrons, not to duplicate but to supplement the supplies and activities of the Government. Except in emergencies, it is therefore considered improper to call upon the Red Cross to furnish articles that are listed in the supply tables of the Medical Department, or those that are usually issued on application through regular channels of military supply, though not listed in the tables. No request should be made for such articles as beds, bedding, medicines, surgical instruments, or the common surgical dressing, such as gauze, absorbent cotton, and bandages. These articles are obtainable by

the Government in abundance, and if hospitals do not have adequate supplies thereof on hand it is usually because requisitions have not been forwarded in time; in other words, because of poor administration.

5. Other gifts, not to meet emergencies and beyond the scope of military supplies, are subject to the instructions of this office, May 4 last, as follows:

> When a gift proposed is of a more permanent type the first formal step will be the presentation to the Surgeon General, for his judgment and approval, of a memorandum of the suggested action from the officer in charge, together with a brief statement of the need. Upon the issue of a memorandum of approval, the cooperation of the Red Cross may be invoked. It will aid in putting the special matter on the way to a speedy conclusion if a memorandum from the Red Cross be given, outlining its interest and purpose in the matter, the gift in some detail, and the station at which it is suggested the gift be used. An indorsement by the Surgeon General will then be issued authorizing the acceptance and delivery of the gift to the officer in charge at the designated station.
>
> It should be made clear that the gift will then become the property of the Government, without restriction or condition in regard to its ultimate use and disposition. At the same time, it should be emphasized that, in so far as possible, under conditions as they arise, the purpose of the donor will be fully recognized. Further, in so far as it is possible to lay down any rule for guidance based on mutual understanding, gifts are to be in kind and not in money.

6. Red Cross houses for convalescents and Red Cross nurses' homes may be established at hospitals as indicated in letter of this office August 14, 1918. The convalecent houses are in effect wards of the hospitals equipped, however, by the Red Cross, not only with ordinary furniture, but with materials for amusement and recreation.

7. As indicated in the same letter, the Red Cross representative at the hospital may be furnished information as to the condition and progress of patients therein with a view to keeping their families advised in the premises, it being understood that the Red Cross acts unofficially in these cases but subject to the supervision of the commanding officer.

8. Red Cross representatives accredited to commanding officers of military hospitals, under G. O. 17, are able to bring to bear upon the personal and social problems of soldiers in the hospitals the large resources of the organization which they represent. Through the local chapters of the home service, they are able to get in touch with the family and the home community of practically every soldier in the service of the United States. Through the communication service of the Red Cross, they are able to inform the soldier concerning his home conditions, as well as to inform the soldier's family concerning the soldier who is undergoing treatment in the hospital.

9. In the military hospitals functioning in physical reconstruction the contact of the Red Cross representatives with the patients of the hospital may be most helpfully made through the chief educational officer and the service which he directs. In this way will be secured a closer coordination of the extra-medical agencies which are working for the rehabilitation of the disabled men.

The members of the educational staff, particularly those who, like the reconstruction aides, do the larger part of their work in the wards, have large opportunities to learn the needs of individual patients, and are interested in securing the most favorable mental attitude on the part of patients toward their hospital treatment. They therefore have a natural interest in utilizing such facilities as the Red Cross home service affords. One function of those reconstruction aides who are qualified as social workers is to serve as a liaison between the hospital and the representatives of the Red Cross, and thus make the resources of the latter available to a much larger number of patients than would otherwise be the case.

10. A full use of these agencies is desired in all military hospitals. It is important, especially at this time, that every reasonable effort be made to keep up the morale of patients so their convalesence may be as rapid and complete as possible. To this end they should contentedly remain in the hospital until their medical and surgical care has been completed, and it is thought that the coordinated activities of the educational service, through the medical social worker, with the home service of the Red Cross will help to accomplish it.

11. The procedures indicated in paragraphs 8, 9, and 10 involve no conflict between the work of the Federal Board for Vocational Education and the home service of the Red Cross.

(*Cir. Letter No. 51, Surgeon General's Office, January 27, 1919.*)

Red Cross Donation of Stereoscopes and Pictures.

1. Notice from the American Red Cross, National Headquarters, to this office announces the gift of about $8,000 worth of stereoscopes and pictures, to be distributed to all hospitals functioning in physical reconstruction.

2. Attention of commanding officers and educational officers is called to this equipment. It is suggested that if the educational service has a trained librarian on its staff, that the care of this equipment be assigned to the librarian. There are 25 different sets of pictures and a stereoscope with each set. Each set of pictures deals with a different subject. It is suggested that some plan be made for systematic circulation of the different sets throughout the wards of the hospital.

3. The librarian can very well select magazine articles, stories, books of travel, or other reading matter which treat the same general topic as each set of pictures. The collection of reading matter and the pictures should supplement each other nicely and add to the interest and usefulness of both.

4. Cooperation between the librarian, occupational aides, educational survey officer, and medical officers will be an important factor in making the best possible use of this equipment. It is believed that, properly used, these pictures will afford profitable entertainment and some information to the patients. Many of these pictures will make a particularly forceful appeal to the men from overseas because they are pictures of foreign countries.

5. It is hoped that good use may be made of the equipment, and this office will be pleased to receive reports of any particularly meritorious plans and devices which individual hospitals may develop for the use of the equipment.

(*Cir. Letter No. 83, Surgeon General's Office, February 12, 1919.*)

Procedure in Requesting Special Assistance from the Red Cross under Circular Letter No. 51.

1. The American Red Cross requests that the commanding officers of the general, base, and post hospitals functioning in physical reconstruction be directed to proceed in the manner described below when requesting special assistance from the Red Cross under Circular Letter, S. G. O., No. 51.

2. The application for assistance indicated in paragraph 5 of Circular Letter, S. G. O., No. 51, presumes that when the officer with whom the request originates and the field director recognizes a special need which can not be met through regular Army channels and is outside the usual Red Cross service, and which they think the Red Cross should meet, the interested officer should as once present the matter to the commanding officer for his approval or disapproval.

3. If the request is approved by the commanding officer, it will be at once forwarded to the Surgeon General's Office for final approval, but as soon as the request has the approval of the commanding officer, the field director will forward a copy of the request, with full particulars of materials, needs, cost, etc., to his division headquarters. The division headquarters will forward the papers, with approval or disapproval and reasons therefor, to national headquarters, department of military relief.

4. If the request is finally approved by the Surgeon General's Office, that office will forward the request to the department of military relief of national headquarters, who will make final decision; the department will inform the Surgeon General's Office of its final action and refer it back with instructions through division headquarters to the field director.

(*Cir. Letter No. 89, Surgeon General's Office, February 14, 1919.*)

Operations of the American Red Cross with the Peace-Time Army.

1. The following letter from The Adjutant General of the Army is quoted for the information and guidance of all concerned:

080 Red Cross (Mis. Div.). NOVEMBER 26, 1919.
CHAIRMAN, AMERICAN RED CROSS,
Washington, D. C.

DEAR SIR: 1. I am directed by the Secretary of War to request that the American Red Cross continue its operations with the peace-time Army as outlined in the succeeding paragraphs. As provided in Circular No. 483, paragraph 7, War Department, 1919, it is desired that the Red Cross continue to act as a connecting link between the enlisted men and their families, as was developed during the recent emergency. Under this program the War Department requests that you continue the following functions acting in close cooperation with the commanding officers:

(*a*) Assist in locating families of soldiers.

(*b*) Arrange friendly visits of families.

(*c*) Arrange to furnish relief in distress among families, whether relief is financial, legal, medical, or social.

(*d*) Report soldiers' illness to families, and vice versa.

(*e*) Arrange helpful advice for benefit of wayward and disobedient children of soldiers.

(*f*) Arrange to move families to better quarters and protect them from bad housing conditions.

(*g*) Arrange to secure proper employment for families.

(*h*) Arrange to protect the families from installment men and unscrupulous sales agents and encourage wise spending of the income.

(*i*) Locate men in the service for inquiring families.

(*j*) Encourage communication between soldiers and families.

(*k*) Make loans to soldiers to enable them to take advantage of furloughs for the purpose of recuperating from illness.

2. Return home on account of distress, sickness, or death in immediate family. (Such loans to be made only upon recommendation of commanding officers when soldier is without funds.)

(l) Assist in handling business difficulties of the soldier or his family.

(*m*) Furnish information about particulars of the Government's program, such as allotments, allowances, insurance, Liberty bonds, vocational training, etc., and assist in handling difficulties in which they are involved.

(*n*) Investigate home conditions and furnish helpful advice for discharged disabled soldiers returning to civilian life.

(*o*) Investigate home conditions at the request of Army officers for confidential information needed in considering questions of medical care and treatment as well as discharge and furlough.

2. It is requested that you continue the following entertainments and recreational functions among convalescents:

(*a*) Provide leadership for the development of music.

(*b*) Provide training in amateur theatricals.

(*c*) Present entertainment of motion pictures, concerts, musicals, etc.

(*d*) Furnish and maintain an equipment of indoor games, such as cards, checkers, chess, dominoes, crokinole, etc.

(*e*) Organize and supervise social functions, such as dances, receptions, etc., for patients.

(*f*) Furnish and maintain a supply of writing materials and tables or desks at which letter writing may be done, and encourage correspondence.

(*g*) Furnish stereoscope and supply of photographs, chosen with particular reference to their educational value, for use therewith.

(*h*) Supply fruit and flowers, smoking materials, and approved refreshments to patients in convalescent houses.

(*i*) Arrange and supervise outdoor recreation.

(*j*) Determine with the medical officers as to the games and sports suited to individual patients or groups of patients, and select approved games and sports to attain desired therapeutic ends.

(*k*) Enlist patients in such activities and supervise the leadership and playing of such games as baseball, indoor baseball, basket ball, volley ball, handball, dodge ball, tennis, boxing, wrestling, soccer, croquet, golf, golf putting, bowling on the green, quoits, rope whipping, knot tying, signaling, tree and flower identification, use of pocket compass, route sketching or elementary map making, fire making and building, shuttle races, discounted cowboy pole, prisoners' base, shinney, potato race, track meet, etc. (These and special games to be so modified as to be best suited to the limitations of the various patients.)

3. It is requested that you continue the following entertainment and recreational functions in hospital wards:

(*a*) Furnish home newspapers to patients when practicable, and in any event the best available daily newspapers; arrange that items of general current interest be read, and aid in distributing books, magazines, and reading matter.

(*b*) Distribute regularly a supply of writing materials, post-cards, etc., and encourage the writing of letters.

(*c*) Furnish and maintain such games as may be suitable, such as checkers, cards, picture puzzles, etc.

(*d*) Furnish and maintain an equipment of phonographs and an assortment of records, the latter to be circulated from ward to ward in such a manner as will insure frequent change and variety of selections.

(*e*) Furnish stereoscope and an assortment of photographs chosen with particular reference to educational value, the latter to be circulated from ward to ward so as to insure frequent change of assortment available in a particular ward.

(*f*) Present entertainments of motion pictures, musicians, singers, etc.

(*g*) Supply fruits, flowers, smoking material, jellies, and other food delicacies when requested by the commanding officer.

4. It is requested that you continue the communication service, as was established in France at the request of the Secretary of War under date of January 26, 1918, and which was later extended to the United States by G. O. 17, section 5, W. D., 1918. Under this program the War Department is desirous that you continue the following functions under such supervision and special rules as may be prescribed by the commanding officers of the various hospitals or other military stations concerned.

(*a*) Notify families when a man is admitted to the hospital for any disease that is serious in its nature or which might develop into something serious.

(*b*) In case of death, immediately communicate to the family whatever details may, in the opinion of the medical officers, be advisable. Telegrams are sent only at the request of the commanding officer.

(*c*) In case of serious or prolonged illness, to send families bulletins of progress, the frequency of which depends on the seriousness of the disease.

(*d*) Write letters for sick and convalescent patients and provide writing materials.
(*e*) Encourage patients to write cheerful letters to relatives at home.

5. This letter does not in any way conflict with the provisions of War Department Bulletin No. 50, dated August 31, 1918, or with Special Regulations, No. 61, War Department, 1917.

Very truly yours,

....
The Adjutant General.

(*Cir. Letter No. 363, Surgeon General's Office, December 5, 1919.*)

VOLUNTEER CHAPLAINS.

Camp Pastors.

1. Under date of July 25, 1918, The Adjutant General of the Army advises that, under instructions of the Secretary of War, the services of clergymen as camp pastors or voluntary chaplains are no longer necessary in view of recent legislation authorizing a large increase in the number of chaplains for the Army.

2. There is inclosed for your information and guidance a copy of the letter which is being sent to various camp commanders in the United States:

SERVICES OF CLERGYMEN AS CAMP PASTORS OR VOLUNTARY CHAPLAINS.

1. In view of the greatly increased number of chaplains authorized by recent legislation, and of the provision now being made for the professional training of chaplains in their duties before appointment, it has been determined, as soon as the services of a sufficient number of additional chaplains become available, to bring to an end the present arrangement at camps and posts whereby privileges within the camps are granted to camp pastors of various denominations and to voluntary chaplains not members of the Military Establishment.

2. Camp and post commanders are instructed to bring this decision tactfully to the attention of any clergymen who are now acting either as camp pastors or as voluntary chaplains in their commands.

3. An appropriate period, not to exceed three months, will be granted for such persons to complete the work that they now have in hand and to make arrangements for leaving camps and posts.

4. This shall not be construed to prevent chaplains on duty with organizations and at camps and posts, with the approval of their commanding officers, from inviting clergymen to conduct services or to assist therewith upon special occasions.

5. In making public announcement at the camps and posts of this decision, attention should be called at the same time to the fact that plans are under way for bringing to the camps, for public addresses and private conferences, a number of men distinguished in their various professions (including the clergy) whom officers and men will have an opportunity to hear upon the moral and spiritual factors of the war and upon other subjects of fundamental interest.

(*Cir. Letter, Surgeon General's Office, July 29, 1918.*)

War Risk Insurance.

1. Attention is invited to the fact that in the cases of officers, enlisted men, and nurses who become totally and permanently disabled in the service their war-risk insurance becomes immediately payable from the date of the insurance of the disability and that this payment is not contingent upon discharge from the service. In such cases the payment of further premiums is not required.

2. It is directed that you prepare a list of all officers, enlisted men, and nurses who in your opinion are totally and permanently disabled, giving the names and disabilities, and forward the same direct to the chief medical advisor, Bureau of War Risk, Washington, D. C., in order that immediate action may be taken by their board dealing with disabilities of this character.

3. The above arrangement has already been put in force at the Walter Reed General Hospital with a great deal of satisfaction resulting to the officials of this hospital, the recipients of the money, and the Bureau of War Risk. The same procedure is being put into effect at United States Army General Hospital No. 41, Fox Hills, Staten Island, N. Y. It is desired that a copy of your letter to the War Risk Bureau be furnished this office for file. Prompt action is directed.

(*Cir. Letter No. 364, Surgeon General's Office, December 4, 1919.*)

OFFICE INSTRUCTIONS ISSUED BY THE SURGEON GENERAL.

Gas-Defense Service, Medical Department.

Under date of May 16 last, the Secretary of War directed the Surgeon General to provide for the supply of gas masks, chemical sprayers for cleaning trenches, and oxygen apparatus for resuscitating wounded during the period ending June 30, 1918.

The duty of providing for the supply of these appliances, of repairing them, and of giving instructions in their use is performed by a special field service of the Medical Department, known as the gas-defense service, the principal office of which is located in this city. It comprises three branches, to wit: (1) Field supply section, (2) overseas repair sections, (3) training section.

The field supply section will purchase or manufacture the appliances named, inspect them, store them, and issue them as needed.

The overseas repair section will receive issues made in bulk from home country, test them, store them, and issue them to troops as required; they will also be charged with the disinfecting and repair of used or injured masks abroad, including all necessary inspections and tests incident thereto.

The training section will provide instructions regarding the use of these appliances, the handling of gases used for training purposes, the training of officers and men in the use of gas-sampling apparatus, gas detectors, and other means of defense against gases; and will communicate the same to all concerned.

Col. Weston P. Chamberlain, M. C., until further orders, will be in charge of the gas-defense service, with such commissioned and enlisted assistance as may from time to time be assigned thereto.

Until further orders there will be allotted to the gas-defense service the following personnel of the Sanitary Corps:

One major.
Twenty-eight captains.
One hundred and fifteen first lieutenants.
Ten hospital sergeants.
Sixty-four sergeants first class.
One hundred and eighteen sergeants.
Seventy-one corporals.
Ninety privates first class.
Three hundred and thirty-four privates.

(*Orders, Surgeon General's Office, August 31, 1917.*)

Revision Board on Applicants for Appointment.

1. A board consisting of the officers named below is hereby appointed for the purpose of reviewing and passing upon all applications for appointment and promotion in the Sanitary Corps:

Col. T. C. Lyster.
Col. R. B. Miller.
Lieut. Col. William D. Wrightson.

2. Lieut. Col. C. L. Furbush will act for and in the absence of any member of the board.

(*O. O., Surgeon General's Office, April 29, 1918.*)

Medical Publications Board, General Publicity Board.

A Medical Publications Board is hereby appointed to review and advise regarding the contemplated publication of all medical manuscripts relating to this bureau:

Col. C. C. McCulloch, jr., chairman.
Lieut. Col. V. C. Vaughan, M. C., N. A.
Lieut. Col. William H. Welch, M. C., N. A.
Lieut. Col. W. C. Longcope, M. C., N. A.

Maj. M. G. Seelig, M. R. C.
Maj. Casey A. Wood, M. R. C.
Maj. F. H. Garrison, M. R. C., secretary.

A General Publicity Board is likewise appointed to review and advise regarding the contemplated publication in current lay journals of all matters related to this bureau:

Col. E. L. Munson, M. C., U. S. Army, chairman.
Col. R. E. Noble, M. C., N. A.
Capt. J. B. Yoder, S. C., secretary.

It is directed that all data for the action of either the Medical Publications Board or the General Publicity Board be forwarded to the respective secretaries.

No permission to distribute, print, or publish any book, interview, pamphlet, review, abstract, article, or monograph shall be given by any officer of the Medical Department without authorization from the Surgeon General, conveyed through the respective boards.

(O. O., Surgeon General's Office, April 29, 1918.)

Use of Personal Communications in Imparting Instructions.

1. The attention of the Surgeon General has been called to numerous instances of official business being conducted in semiofficial and personal communications leaving the office. This practice has resulted in quite a few complaints due to the fact that instructions and information are oftentimes transmitted to an officer without being forwarded through military channels.

2. In the interests of efficient office administration it is directed that the practice of dealing with official business in personal letters be discontinued and that any communication having any reference to the official business of this bureau conform to existing regulations as regards form and the channels of communication.

(O. O., Surgeon General's Office, May 3, 1918.)

Circular Letters, Promulgation.

1. Mimeograph letters and circular letters of all kinds will in future be signed by the Surgeon General or by the head of the division in which they originate when so directed by the Surgeon General. As such circular letters have the general force of regulations and orders, it is necessary that their text shall be carefully considered in order to prevent conflict with previously existing orders and regulations and letters of instruction. Conflicting circular letters have been sent out, and this modification of the procedure has become necessary on that account.

(O. O., Surgeon General's Office, May 3, 1918.)

Medical Publications Board and General Publicity Board.

1. Office order issued under date of April 29, 1918, appointing a Medical Publications Board and a General Publicity Board, is hereby amended by the addition of the name of Col. T. C. Lyster, Medical Corps, N. A.

2. The boards as now constituted are as follows:

Medical Publicity Board:
  Col. C. C. McCulloch, jr., chairman.
  Col. T. C. Lyster, M. C., N. A.
  Lieut. Col. V. C. Vaughan, M. C., N. A.
  Lieut. Col. William M. Welch, M. C., N. A.
  Lieut. Col. W. C. Longcope, M. C., N. A.
  Maj. M. G. Seelig, M. R. C.
  Maj. Casey A. Wood, M. R. C.
  Maj. F. H. Garrison, M. R. C., secretary.
General Publicity Board:
  Col. E. L. Munson, M. C., U. S. Army, chairman.
  Col. R. E. Noble, M. C., N. A.
  Capt. J. B. Yoder, S. C., secretary.

(O. O., Surgeon General's Office, May 3, 1918.)

Reconstruction Aides.

For the purpose of administration, the Section of Reconstruction Aides, heretofore under the direction of the Division of Orthopedic Surgery, will be transferred to and be under the immediate jurisdiction of the officer in charge, Division of Special Hospitals and Physical Reconstruction.

(*O. Memo., Surgeon General's Office, May 6, 1918.*)

Gas Service, Surgeon General's Office.

1. Col. T. C. Lyster, Medical Corps, N. A., is hereby designated as the representative of the Medical Department, through whom all matters pertaining to the Gas Service will pass, and is authorized to deal directly with the director of the Gas Service in the United States with a view to the coordination of the several departments now dealing with gas affairs.

2. All correspondence for France which affects the Gas Service in any way will pass through the office of the director of Gas Service in the United States.

(*O. O., Surgeon General's Office, May 10, 1918.*)

Circulation of Office Memoranda, Surgeon General's Office.

With a view to uniformity in the circulation of all office memoranda conveying instructions or information pertinent to the work of this bureau, office orders and circular letters will hereafter be issued through the circulation clerk, room H–148.

It is directed that in the future no office memoranda, circular letters, office orders, etc., be promulgated without first being submitted to the undersigned for approval and transmission to the circulation desk for distribution.

(*O. O., Surgeon General's Office, May 11, 1918.*)

Division of Aviation, Surgeon General's Office.

The Division of Aviation in the Office of the Surgeon General is hereby created and will perform the functions of the Medical Division, Signal Corps, now abolished. Col. T. C. Lyster, Medical Corps, N. A., is placed in charge of this division.

(*O. O., Surgeon General's Office, May 11, 1918.*)

Physical Reconstruction Division, Surgeon General's Office.

The Division of Special Hospitals and Physical Reconstruction will in the future be known as the Division of Physical Reconstruction.

(*O. O., Surgeon General's Office, May 13, 1918.*)

Air Service Division, Surgeon General's Office.

Office Order No. 33, dated May 11, 1918, creating the Division of Aviation in the Office of the Surgeon General, is hereby revoked.

A division in this office is created to be known as the Air Service Division.

The officer in charge is authorized to deal directly with the Chief of Air Service in all matters pertaining to medical personnel, hospitals, and supplies attached to aviation squadrons, fields, or other aviation activities.

For administrative purposes within this office, the officer in charge of the Air Service Division will have the same powers, functions, prerogatives, and duties as those which, under existing orders and regulation, pertain to the department surgeon of a territorial department.

Col. T. C. Lyster, Medical Corps, N. A. is placed in charge of this division.

(*O. O. No. 42, Surgeon General's Office, May 23, 1918.*)

Undergraduate Medical Education.

1. A standing committee, composed of the officers named below, is hereby constituted to consider and to report to the Surgeon General upon all questions of policy concerning undergraduate medical education, relations with or use by the Medical Department of medical colleges or other instrumentalities connected with such undergraduate medical education or with hospital interneships, and such other matters as may be referred to it by the Surgeon General. Detail for the committee:

Col. F. F. Russell, Medical Corps, U. S. Army.
Col. V. C. Vaughan, Medical Corps, N. A.
Lieut. Col. W. H. Welch, Medical Corps, N. A.
Lieut. Col. H. D. Arnold, Medical Reserve Corps.

2. Lieut. Col. H. D. Arnold, Medical Corps, N. A., is designated as the representative of this office to the Committee on Education and Special Training of the War Department, and will there represent the policies decided upon by the Surgeon General.

(O. O. No. 51, Surgeon General's Office, June 3, 1918.)

Overseas Hospital Division, Surgeon General's Office.

An Overseas Division of the Surgeon General's Office is hereby created. The activities of this division will embody all matters pertaining to overseas service, and will include, among other things, priority of shipment schedule, cables, organization and equipment of units, liaison, and requests from the American Expeditionary Forces.

Brig. Gen. Robert E. Noble, Medical Department, is designated as officer in charge of this division.

(O. O. No. 64, Surgeon General's Office, July 10, 1918.)

Mimeograph Department, Surgeon General's Office.

The volume of work now passing through the multigraph and mimeograph room justified the establishment of certain rules in regard to the handling of the work.

The reason for this is obvious. Good business administration will not permit of waiting until the last minute before the supply of a given form is exhausted before requisitioning for a replenishment of this form. Requisitions for rush work at times are justified, but in the main an observation would indicate a lack of foresight in anticipating needs along this line resulting in a request for a particular job to be given preference. This results in confusion, disappointment, and considerable friction between the officer in charge of this work and the person requisitioning for supplies.

An endeavor should be made, in so far as practicable, by each officer and clerk to anticipate in advance the needs of a particular division in the way of multigraph and mineograph work.

(O. Memo. No. 43, Surgeon General's Office, June 18, 1918.)

Gastroenterology Section, Surgeon General's Office.

1. For purposes of administration, the Section of Gastroenterology of the Division of Internal Medicine is hereby abolished and in the future the work of this section will form an integral part of the Division of Internal Medicine.

(O. Memo. No. 53, Surgeon General's Office, July 1, 1918.)

Division of Roentgenology, Surgeon General's Office.

The Division of Roentgenology in the Office of the Surgeon General is hereby created. Lieut. Col. Arthur C. Christie, Medical Corps, N. A., is designated as the officer in charge.

(O. O. No. 66, Surgeon General's Office, July 10, 1918.)

Anthropology.

A Section of Anthropology in the Division of Medical Records in the Office of the Surgeon General is hereby created. Maj. Charles B. Davenport, Sanitary Corps, N. A., is designated as the officer in charge. The functions of this section are to be to secure the highest quality of the measurement of recruits and of identification records as done by the Surgeon General's Office for the purposes of the War Department; to assist, as called upon, in the analysis and synthesis of the statistics compiled from medical records; to care for and help analyze physical examination records; to care for and classify identification records; and to assist the War Department in all questions about racial dimensions and differences.

(O. O. No. 68, Surgeon General's Office, July 23, 1918.)

Medical History Board.

1. The board appointed by Special Orders, No. 196, A. G. O., August 23, 1917, for collecting and preparing material for the Medical and Surgical History of American Participation in the War was primarily intended to establish the administrative machinery and conduct the correspondence necessary for collecting historical material in this country and abroad. The editing of such of the materials already collected as might need redaction has been accomplished so far with one of its members and clerical assistance.

2. Each division of the office and others are informed that while the board conducts administrative business, it is the part of those who are making the history of the war to write it, and all division heads are invited to collect and prepare any materials in their specific subjects for this history. Such material, when in final shape, can be sent to the History Board for sealing and safe-keeping. It would, meantime, be at the disposal of the heads of divisions for publication, abstracts, or other purposes to which it might properly be applied.

(*O. Memo. No. 73, Surgeon General's Office, August 2, 1918.*)

Prohibiting Promises to Candidates for Commissions.

Because of embarrassments experienced in the past, it becomes necessary to caution officers on duty in this office against making any promises to any candidate for commission as regards appointment, the grade in which he will be commissioned, the character of duty to which he will be assigned, or any assurance of exemption after receiving a commission.

(*O. Memo. No. 74, Surgeon General's Office, August 12, 1918.*)

Authenticating Telegrams.

In the future all telegrams emanating within a division of the office will bear the O. K. of the head of that division by the placing thereon of his signature below the typewritten word "Gorgas."

The head of the division will be responsible for compliance with the instructions issued by the Chief of Staff, recently promulgated throughout the office, having to do with irregularities in the manner of handling telegrams.

(*O. Memo. No. 75, Surgeon General's Office, August 12, 1918.*)

Committee to Consider Hospital Care of Discharged Soldiers.

A committee is hereby appointed to consist of the medical officers named below as representatives of the Surgeon General's Office, to meet with the Bureau of War Risk Insurance for the purpose of considering the question of hospital care and treatment of discharged soldiers with special reference to cases of tuberculosis:

Brig. Gen. Robert E. Noble.
Lieut. Col. E. H. Bruns.
Lieut. Col. Edgar King.

(*O. O. No. 81, Surgeon General's Office, August 23, 1918.*)

Division of Physical Reconstruction.

All matters pertaining to curative workshops or any other educational work and physiotherapy, in connection with the continued treatment of sick and wounded soldiers, are placed under the jurisdiction of the Division of Physical Reconstruction. All communications having to do with this subject should be forwarded to the director of Physical Reconstruction, wing 1, floor 3, of Unit F Building.

(*O. Memo. No. 80, Surgeon General's Office, August 27, 1918.*)

Rules for Preparation of Correspondence for Other Staff Bureaus.

With a view to obviating in the future embarrassments resulting in the past from subordinates of division heads communicating direct with staff bureaus of the War Department, including the Secretary of War and his assistants, the following instructions are issued and will govern the preparation for signature and the signing of certain classes of correspondence leaving this office.

1. Any communication having to do, either directly or indirectly, with matters of policy or precedent, the institution of new projects involving personnel or materials, or requests for the reconsideration of War Department action will be prepared for the signature of, and be signed by, the Acting Surgeon General.

2. Any communication not coming within the classes defined above and addressed to another staff bureau or activity of the War Department, and any communication having the force of instructions to Medical Department personnel, will be prepared for the signature of, and be signed by, the head of the division concerned with the subject matter.

3. All multigraphed or mimeographed communications, other than memoranda or routine letters which do not convey instructions, will bear the typewritten name of the Acting Surgeon General, followed by his rank and corps and the words "Acting Surgeon General." The original

will bear the O. K. of the head of the division interested in the subject matter, and will be signed by him in the upper right-hand corner of the communication.

4. All letters leaving the office will be typed "From: The Acting Surgeon General," and be signed "By direction of the Acting Surgeon General" or "For the Acting Surgeon General." All telegrams and cablegrams will be typed "Richard," followed by the words "Acting Surgeon General."

5. Heads of divisions will issue such instructions to subordinates as will insure a strict compliance with the above.

(*O. Memo. No. 83, Surgeon General's Office, September 4, 1918.*)

Resignations of Employees.

For some time the War Department has required that resignations of employees should show the cause of the separation, either embodied in the resignation itself or by accompanying statement of the bureau.

In order that accurate information may be secured for statistical purposes, and with a view to securing a remedy for the exceedingly large turnover, the officer in charge of each division will, before forwarding a tender of resignation, ascertain the real cause for the step proposed to the end that the employee's services may be retained if practicable. If it is impracticable to retain the services of a clerk, a statement by the clerk, embodied in the resignation itself, or by the head of the division on an accompanying statement will be made in each instance.

In this connection it will become the duty of the head of the division to take up all passes issued.

(*O. Memo. No. 87, Surgeon General's Office, September 9, 1918.*)

Administrative Matters Pertaining to Physical Examinations.

1. All administrative matters in this office relating to the physical examination of officers, soldiers, recruits, and registrants will be handled hereafter in the Division of Sanitation.

2. Special examiners assigned to examining boards for drafted men, and all other specialists assigned to duty at a camp or recruit depot, are under the immediate medical supervision of the surgeon of the camp or depot and have no official connection with the professional divisions or sections of this office which were responsible for their selection or assignment. Orders for the changing of personnel engaged in this work will not be requested without consultation with the Division of Sanitation. Such specialists or special examiners will not be required by professional divisions or sections of this office to submit routine or special professional reports of any character. The camp surgeon will be called upon for such professional reports as may be deemed necessary by the Division of Sanitation, and he may make such report either by transmitting a memorandum from the specialist in question or by compiling data furnished by the specialists. The rendition of routine or special professional reports should be reduced to the minimum consistent with efficient administration. Reports designed merely for the purpose of collecting data and compiling statistics will be discontinued. Chiefs of divisions and sections will take immediate steps to carry out these instructions.

3. The phraseology "assigned to duty at a camp or recruit depot" is not intended to include the base or post hospital pertaining to such camp or depot.

4. Attention is invited to attached copy of instructions recently promulgated to surgeons of camps, divisions, and recruit depots.

5. When professional consultants visit base hospitals and post hospitals at recruit depots for investigation of their respective services therein, they will investigate also the efficiency of the professional work of the respective special examiners and specialists on duty at the camp or depot. They will have no executive authority over the special examiners and specialists whose work they are investigating. Following such investigation, a report will be made to the camp authorities and to this office regarding the work, together with any criticisms or recommendations that may be called for.

(*O. Memo. No. 101, Surgeon General's Office, September 24, 1918.*)

Function of Executive Officer, Surgeon General's Office.

Col. C. R. Darnall, Medical Corps, is relieved from duty with the Finance and Supply Division and is designated as executive officer of this office. During the absence of the Surgeon General the executive officer will be in full charge of the Surgeon General's Office.

Col. Albert E. Truby, Medical Corps, is relieved from duty with the Division of Sanitation and is designated as assistant to the executive officer.

Col. James Robb Church, U. S. Army, retired, will report to the Chief of the Division of Sanitation for duty.

(O. O. No. 92, Surgeon General's Office, November 13, 1918.)

Reduction and Consolidation of Administrative Divisions, Surgeon General's Office.

1. In order to simplify and coordinate the administrative work of this office, the number of divisions will be reduced on December 1 to 11, as shown on the chart which has been distributed to all concerned.

2. Divisions which have been discontinued will become sections of one of the permanent divisions. The functions as well as the personnel of these sections will continue as heretofore, except that they will be under the complete control and direction of the head of the division concerned.

(O. O. No. 97, Surgeon General's Office, November 30, 1918.)

Instructions Governing Correspondence from Surgeon General's Office.

In order to improve the method of handling correspondence going out of this office and to facilitate and coordinate the work, the following instructions are issued for the guidance of all concerned:

1. Outgoing communications will be classified and prepared for signature according to their subjects as follows:

A. For the signature of the Surgeon General:

(*a*) Matters of policy or precedent.

(*b*) The institution of new projects.

(*c*) Requests for reconsideration of War Department action.

(*d*) Other matters which in the opinion of the head of the division should be signed by the Surgeon General.

(*e*) Cablegrams.

These communications will be sent to the executive officer. The signature will be in the following form, typing name and rank:

"M. W. IRELAND,
Surgeon General, U. S. Army."

B. For the signature of the executive officer:

(*a*) Mimeographed work, including letters, orders, instructions, or reports.

(*b*) Important matters which should be brought to the personal attention of the Surgeon General before forwarding.

(*c*) Matters pertaining to more than one division.

The signature will be in the following form (except telegrams, see par. 3):

"C. R. DARNALL,
Colonel, Medical Corps, U. S. Army, Executive Officer."

C. For the signature of the head of a division:

(*a*) All routine correspondence, reports, and returns pertaining to the division which are not included in A and B.

2. All official letters leaving the office to persons within the military service will be typed "From: The Surgeon General, U. S. Army," and unless for the Surgeon General's own signature, will be signed "By direction of the Surgeon General" or "For the Surgeon General."

Every communication requiring answer will show that reply must be addressed, "Attention ....Division."

Letters to persons outside of the military service will show authorization, "The Surgeon General directs me," etc.

3. All cablegrams and telegrams will be typed "IRELAND." The Surgeon General will himself initial the former.

Outgoing telegrams will have typed in the upper right-hand corner the initials of the officer dictating same and the initials of the stenographer.

All telegrams will be initialed below the word "IRELAND" by the head of the division concerned.

Three carbon copies will accompany each telegram—one for the official files, one for the pending telegram file, and one for the executive officer.

The sending of unnecessary telegrams covering matters which could be handled efficiently by ordinary mail or by telephone will be discontinued.

As the minimum rate for Government messages is based on 20 words, including the name of the addressee, address, and signature, all outgoing telegrams will be censored by the head of the division, and words, phrases, and sentences which are not necessary for a clear understanding of the message will be eliminated. In this connection the instructions in letter from the A. G. O., July 29, 1918, will be carefully observed.

4. Only such officers as may be designated by the head of a division will sign the official letters of Class C, paragraph 1. It is desired that heads of divisions require as many of the communications as possible to pass over their desks in order that they may be familiar with and coordinate all the activities of their various sections.

5. All communications requiring more than 10 copies will be mimeographed. Every request for mimeograph work will be sent to the executive officer. The typewritten copy accompanying the request will be carefully prepared and made complete before being submitted. A carbon copy (colored sheet) should accompany each original communication to be mineographed.

6. The original of each communication prepared for the signature of the Surgeon General or the executive officer, as well as of each communication to be mimeographed, will be initialed by the head of the division just below and to the right of the signature space.

7. Instructions for the personnel of this office will usually be communicated by one of the following methods:

(*a*) Office Orders No. ——— (these orders will be used to convey instructions for general distributions and for orders to personnel).

(*b*) Memorandum (without number) (these memoranda will be used to convey information which does not require general circulation).

(*c*) Official letters.

Instructions to medical officers at stations other than the Surgeon General's Office may be communicated as follows:

(*d*) Circular No. ——— (official circulars on Medical Department affairs promulgated through the Adjutant General's Office).

(*e*) Circular Letter No. ——— (for the general distribution of information). (Effective January 1, 1919.)

(*f*) Official letters (to one or more individuals but not for general distribution).

Complete serial files of circulars and circular letters will be kept in each division and by others concerned.

8. Heads of divisions will be held responsible for the circulation and distribution of orders, circulars, and other instructions to the personnel of their divisions. They will also issue such instructions to subordinates as will insure strict compliance with the provisions of this order.

9. Attention is directed to the following office memoranda pertaining to this subject: Nos. 43, 53, 67, 69, 72, 75, 78, 81, 90, 93, 96, 112, 114, 121, and 122; also to General Orders, No. 23, War Department, August 5, 1912, and to letter from the Adjutant General's Office, July 29, 1918, regarding official telegrams.

10. Office Memorandum No. 83 and other office memoranda in conflict with the above are rescinded.

(O. Memo., Surgeon General's Office, December 11, 1918.)

Photographic Records of the War, Preservation of.

The following letter, dated February 15, 1919, from The Adjutant General of the Army to the chiefs of all bureaus, branches, and sections of the War Department is quoted for the information and guidance of all concerned:

> In order to preserve the photographic records of the war in such form as to be readily accessible to all branches of the service, and at the same time to secure a permanent and safe repository for pictures illustrating the equipment, personnel, and activities of each bureau and section of the War Department, it is directed that when for any reason photographs which have been collected by your organization are no longer desired for use by your section, or can no longer properly be cared for in connection with your office, that those which are of sufficient value to be incorporated in the official records of the war be turned in to the Pictorial Section, Historical Branch, War Plans Division, General Staff, at the Army War College, Washington, D. C.

(Memo., Surgeon General's Office, February 19, 1919.)

Circulation of Original Communications in the Surgeon General's Office.

1. In order to expedite the circulation of original communications from The Adjutant General's Office and other bureaus, forwarded by the circulation desk of this office, heads of divisions will have excerpts copied, when necessary, forwarding the circulated copy within 24 hours after receipt. Original communications will not be filed or their transmission delayed, but will be returned to the circulation desk, whence they will be sent to the record room for file and future reference. The importance of expediting the circulation of papers is evident. Prompt action on the part of all concerned is enjoined to insure against unnecessary delay of papers within a division.

(*Memo., Surgeon General's Office, March 7, 1919.*)

Correspondence, Complaints in Reference to.

1. The reports of inspectors indicate that there are well-founded complaints by commanding officers of hospitals that communications sent to the Surgeon General's Office are not answered promptly and in some instances are not answered at all. It is directed that heads of divisions and sections carefully consider this matter and immediately institute measures to insure prompt reply to letters and telegrams received.

(*Memo., Surgeon General's Office, March 25, 1919.*)

Signature of a Subordinate in Lieu of His Commander.

1. The Secretary of War has issued instructions as follows:

Circular }
No. 182. }

War Department,
Washington, April 12, 1919.

SIGNATURE OF A SUBORDINATE IN LIEU OF HIS COMMANDER.

1. A large number of communications have been received by or passed through the War Department which have been signed by a subordinate of the officer responsible for the communication, by his direction or in his name, for which there is no authority or apparent reason.

2. Chiefs of staff corps and departments and commanding generals of territorial departments will issue instructions to those under their jurisdiction to reduce the practice indicated in paragraph 1 to the minimum required by absolute necessity.

3. Commanding officers of posts, camps, stations, and organizations will take measures to require that communications will be signed by the officers responsible for them, except in case of communications permitted by regulations to be authenticated by a staff or executive officer.

(312.47 A. G. O.)

By order of the Secretary of War:

Peyton C. March,
General, Chief of Staff.

Official:
J. T. Kerr,
Adjutant General.

2. In connection therewith attention is called to the provisions of Office Memorandum No. 133, December 11, 1918, particularly paragraph 1.

(*Memo., Surgeon General's Office, April 29, 1919.*)

Indorsements, Preparation of.

1. Hereafter, in preparing indorsements it will be the duty of stenographers to typewrite the classification or file number in the upper left-hand corner of the indorsement, on the same line with the number of the indorsement.

For example:

S. G. O. 201 (Doe, John). [1st ind.]

War Dept., S. G. O., May 1, 1919. To the Commanding Officer, General Hospital No. 31, Carlisle, Pa.

1. For remark.

By direction of the Surgeon General:

Richard Roe,
Colonel, Medical Corps, U. S. Army.

2. The classification or file number will be found on the right-hand margin of the communication which is being indorsed. If no number appears on the margin, the record room will be asked to furnish one.

(*Memo., Surgeon General's Office, April 30, 1919.*)

Military Title Used in Correspondence with Reference to Honorably Discharged Officers.

Under date of May 6, 1919, The Adjutant General of the Army instructs this office as follows:

In corresponding or communicating with or referring to honorably discharged officers, their military title, when known, will be used.

By direction of the Surgeon General.

(*Memo., Surgeon General's Office, May 8, 1919.*)

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